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BLUE JAY

Volume 68 Number 1

March 2010



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Top: Figure 2. Flowering host plants of the Mormon Metalmark. Right: Branched Umbrella Plant (*Eriogonum pauciflorum*). Left: Rubber Rabbitbrush (*Ericameria nauseosus*); August 2009. See article by Peterson et al. on p. 37.

Katherine Peterson



Bottom: Prairie Rattlesnake basking on a gravel road near Val Marie, SK. Students at the University of Regina are currently investigating factors affecting road mortality of snakes in the grasslands of southern Saskatchewan.

Ashley Fortney

Blue Jay

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THIS ORGANIZATION RECEIVES FUNDING FROM:



BIRDS

68th ANNUAL SASKATCHEWAN CHRISTMAS BIRD COUNT - 2009

ALAN R. SMITH, Box 154, Avonlea, SK S0H 0C0

The Counts

Perhaps it's the recession, an aging demographic, the cold weather that began on the 1st of December, or a combination of all these factors, but the 83 Christmas Bird Counts submitted this year represented the fewest counts since 1992, when only 80 counts were conducted. Interestingly, more observers spent more hours on this year's counts than on last year's 90 counts.

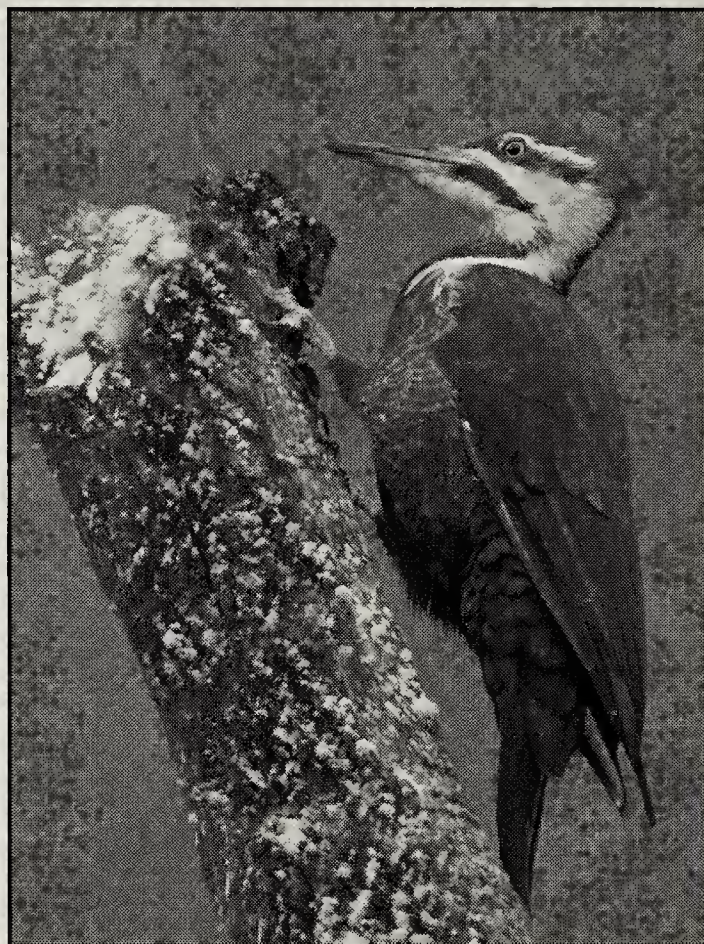
Despite a hefty reduction in the number of counts, several new counts were added. Orval and Beverley Beland conducted counts at Cater and Denholm, adding much needed coverage to the west-central portion of the province. Other new counts were located at Besnard Lake and Oxbow.

Sadly, we lost a long-time contributor when David Chaskavich passed away only weeks after compiling the Broadview count. David was in charge of the Broadview count most years since 1980, and recently sent in counts from Ellisboro and Wolseley. He will be missed.

The Birds

Due to the reduced number of counts, the total of 102,258 birds was below average for recent years. On the other hand, the 92 species seen on count day was about average.

As usual Saskatoon recorded the most species, with 43 on count day. The runners-up were Estevan and Pike Lake, with 32 species.

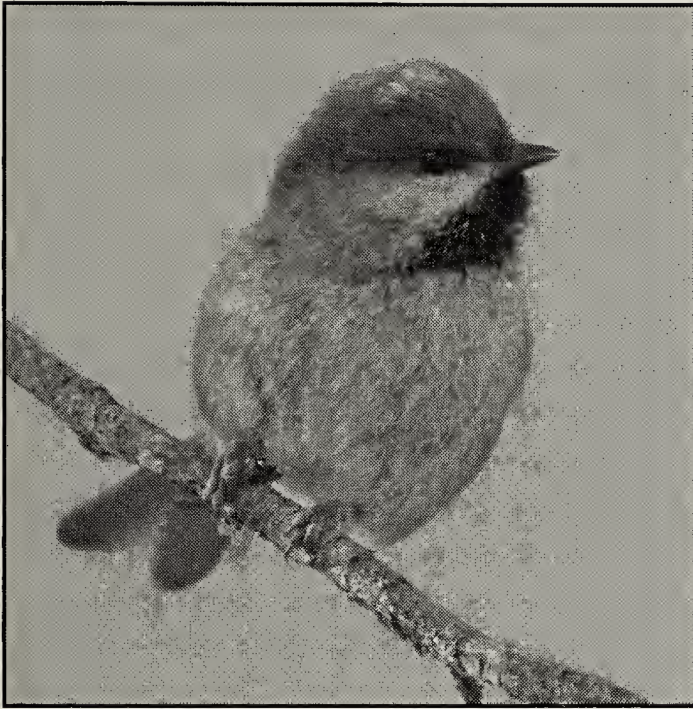


Pileated Woodpecker. *Nick Saunders*

Population Trends

Most of the news was good for wintering birds. Several boreal forest species showed marked increases over previous years (see Table 7). These included the Pileated Woodpecker, Red-breasted Nuthatch, Pine Siskin, and White-winged Crossbill. Record high counts for the nuthatch (263) and siskin (292) were set at Saskatoon (see Table 6).

Northern Flickers and American Robins, species normally considered to be "summer birds," were found in increased numbers over previous years. The former set a new high count when 36 were noted on the Saskatoon Count (see Table 6).



Boreal Chickadee.

Nick Saunders

In contrast, very few species showed notable decreases. Among these are the Bohemian Waxwing and the European Starling (see Table 7).

The self-introduced Eurasian Collared-Dove and House Finch continue to expand their numbers and range. The dove has finally shown up in Saskatoon after its appearance in surrounding districts over a decade ago. The finch may have overcome a barrier to northward expansion appearing on counts in Fenton and Prince Albert. The species has been present in Saskatoon since the early 1990s.

New Species

A much celebrated and unexpected species was added to the all-time CBC and provincial list when a Rustic Bunting was seen on the Creighton Count on 14 December 2009. The bird first appeared on 2 December and is still present at the time of this writing.

The Rustic Bunting is a widespread Eurasian species that has on occasion wandered to North America. The bunting brings the number of species recorded on the Saskatchewan CBC to 184.

Other Rarities

Very few other rarities of note were recorded. The rarest of these was a well-described Blue-winged Teal on the Regina count; there are only 10 previous records. Some rarities were reported without the requested documentation, and thus have to be regarded with some circumspection. Remember, the reputation you save may be your own!

Questionnaire

Many thanks to those who took the time to answer our questionnaire regarding the submission of their CBC results to the national database with Bird Studies Canada (BSC). One compiler mistakenly thought we were reluctant to accept their results; nothing could be farther from the truth. As long as the basic guidelines are observed, we are more than happy to accept any and all CBCs, regardless of whether they are sent on to BSC. Furthermore, BSC does not accept results from the Christmas Mammal Count (Saskatchewan is only one of two jurisdictions in North America to conduct a CMC).

Count Areas and Participants

(Names of compilers are in italics).

1. ARCHERWILL. Gerald Hiron, Susan Hiron, Buddy Hnetka, Pauline Hnetka, *Elaine Hughes*, Dorothy Klettberg, Willie Klettberg, Judy Revoy, Stan Revoy, Lori Rohne, Rick Rohne.
2. AVONLEA. Randi Edmonds, Don Robertson, *Alan Smith*, Blaine Sudom.
3. BANGOR. *Allan Bolton*, *Lynn Bolton*, Alan Hayward, Alleen Hayward, John Maddaford, Leslie Maddaford, Bev McLaren, Raye McLaren.
4. BESNARD LAKE. Jon Gerrard, Naomi Gerrard, *Peter Gerrard*.
5. BIGGAR. Murray Newton, Craig Palmer, Mark Pickett, Linda Schnedar, Lorrie Sielski, Larry Sutherland, *Guy Wapple*, Marguerite Wapple, Rob Wapple.
6. BIRCH HILLS. Doug Boivin, Carman Dodge, Margaret Mareschal, *Moe Mareschal*, Don Weidl.

7. BROADVIEW. *David Chaskavich, Red Hoskins, Barbara Weidl, Don Weidl, Alex Wyllie.*
8. BROMHEAD. *Martin Bailey, Carol Bjorklund.*
9. CABRI. *Carman Dodge.*
10. CANDLE LAKE. *Carman Dodge, Sandra Klassen, Wayne Klassen, Margaret Mareschal, Moe Mareschal, Don Weidl.*
11. CATER. *Bev Beland, Orval Beland.*
12. CHRISTOPHER LAKE. *Jeannie Walker.*
13. CHURCHBRIDGE. *Elin Johnson, Ron Johnson, Martha Karau, Wally Karau, Phyllis Kaeding, Elaine Pollock, John Pollock, Ed Wirth, Gloria Wirth.*
14. CLARK'S CROSSING. *Carol Blenkin, Lucille Bradisch, Dave Cook, Louise Cook, Lorne Duczek, Orly Felton, Daniel Giesbrecht, Terry Hams, Marilyn Haskins, Donna Haugen, Ron Jensen, Robert Johanson, Heney Klypak, Gordon Koshinsky, Margaret Koshinsky, Mary Loewen, Audrey MacKenzie, Bill MacKenzie, Hilda Noton, Sylvia Raginski, Nick Saunders, Dennis Seib, Ruth Seib, Jan Shadick, Stan Shadick, Marten Stoffel, Hilda Voth, Michael Williams.*
15. CODETTE LAKE. *Doug Boivin, Carman Dodge, Barb Weidl, Don Weidl.*
16. CORONACH. *Ross Dickson, Alan Smith.*
17. CRAVEN. *Stephane Canevet, Ann Cockman, Jim Cummings, Robin Enelsin, Elaine Exelby, Shirley Friel, Trevor Herriot, Louise Holloway, Phil Holloway, Phyllis Ilsley, Jennifer Karst, Lauretta Lane, Bob Luterbach, Kent Lynn, Barbara Mader, Doug Mader, Kimm Mann, Karen McIver, Barry Mitschke, Kevin Moore, Dora Mushka, Gerald Mushka, Catherine Parkinson, Brett Quiring, Jim Rollins, Susan Rollins, Jeannette Taylor, Rob Taylor.*
18. CREIGHTON. *Brenda Schmidt, Harvey Schmidt.*
19. CROOKED LAKE. *Boyd Metzler, Pat Ward.*
20. CROOKED RIVER. *Helen Carson, Lyle Carson, Burnie Lewis, Joyce Lewis, Margaret Mehler, Morley Mehler, Shirley Wishard.*
21. CYPRESS HILLS PROVINCIAL PARK (Centre Block). *David Larson, Madison Larson, Margaret Larson, Tanya Larson, Brynne Martin, Mimi Martin, Melody Nagel-Hisey, Kate Rutowski, Marlee Rutowski, Sophie Rutowski, Cassidy Schock, John Schock, Betty Swihart.*
22. DENHOLM. *Bev Beland, Orval Beland.*
23. DORINTOSH. *Joe Twidale, Lorraine Twidale.*
24. EASTEND. *Tom Donald, Robert Gebhardt, Alice Hanline, John Hanline, Joan Hodgins, Mary Thomson, Heidi Topham, Eldon Wig.*
25. EDENWOLD. *Jocelyn Hextall.*
26. ENDEAVOUR. *Norman Harris.*
27. ESTEVAN. *Bob Andrist, Cheryl Andrist, Glen Coles, Barry Dies, Marilyn Dies, Gerry Fichtemann, Kathy Hedegard, Larry Preddy.*
28. ESTUARY NORTH. *Cathy Cocks, Dean Francis, Fran Francis.*
29. FENTON. *Carman Dodge, Moe Mareschal, Don Weidl.*
30. FORT QU'APPELLE. *Jim Armstrong, Darleen DePorque, Ronald Hooper, Alice Isfan, Jack Lowe, Jean McKenna, Jennie Melanson, Alan Mlazgar, Wendy Paquin, Kelsey Pletz, Keith Stevens, David Sutherland, Elaine Willox.*
31. GARDINER DAM. *Greg Fenty, Daniel Giesbrecht, Jeff Jensen, Ron Jensen, Stan Shadick, Nick Saunders, Marten Stoffel, Guy Wapple.*
32. GOOD SPIRIT LAKE. *Bill Anaka, Dorothy Riesz, Ray Riesz, Lloyd Wilson, Marj Wilson.*
33. GRAYSON. *Carina Helm, Charles Helm, Daniel Helm, Karl Zimmer.*
34. HARRIS. *Ryan Dudragne, Ron Jensen, Nick Saunders, Betty Selsey, Fred Selsey, Guy Wapple.*
35. HEPBURN. *George Dirks, Thelma Dirks.*
36. HOLBEIN. *Bill Hughes, Carl Miller.*
37. HUDSON BAY. *Mo Alain, Roger Alain, Donna Coates, Gerry Coates, John Daisley, Rosalie Daisley, Joyce Hayes, Les Hayes, Agnes Llewellyn, Peter Llewellyn, Ron Shepherd, Vivian Shepherd, Bev Soules, Ed Soules, Gloria Stang, Wayne Thacker, Mervin Williamson, John Zolkavich.*
38. IMPERIAL. *Ross Dickson.*
39. INDIAN HEAD. *B. Duran, M. Duran, E. Escott, Irv Escott, David Gehl, R. Gehl, L. Gendron, Lansley Gibbens, R. Hearn, Susan Hearn, Gordon Howe, Jim Jinks, Linda Jinks, Nick Kucharan, D. Loran, A. Scott, Brian Scott, Janele Scott, Lorne Scott, Heidi Topham, Ian Topham, C. Skinner, C. Skinner, Fred Skinner, L. Skinner.*
40. KELVINGTON. *Dianne Sloan, Marguerite Sloan.*

41. KENASTON. *P. Lawrence Beckie.*
42. KENOSEE LAKE. *Boyd Metzler, John Pollock.*
43. KITCHEN NORTH. *Dallas Fairburn.*
44. KINISTINO (Horseshoe Bend). *Mika Messer, Verna Messer.*
45. KINLOCH. *Elaine Asbjornhus, Don Forbes, Doreen Forbes, A. J. Greenly, Cliff Logan, Ralph Wang, Doreen Wickstrom.*
46. KYLE. *David Hamilton, Glen Nelson, Yvonne Nelson, Glen Pederson, Martin Stoffel, Dan Zazelenchuk.*
47. LA RONGE. *Bob Bruce, Holly Chasse, Syd Robinson, John Schisler, Jan Shewchuk, Karen Waters.*
48. LEADER NORTH. *Daisy Meyers.*
49. LOVE - TORCH RIVER. *Joan Birkett, Bert Dalziel, Duke Dalziel, Joan Dalziel, Sara Dalziel, Jack Dewar, Lena Dewar, Scott Edwards, Roseanne Kirkpatrick, Ron Knutson, Terry Knutson, Paul L'Heureux, Bill Matthews, Lynn Matthews, Bev Macauley, Dave Macauley, Lillian Nessel, David Pratt, Sandra Topp.*
50. LUSELAND. *Estelle Finley, Kim Finley, Graeme Finley, Liam Finley, Valerie Finley, Brent Honeker, Shirley Honeker.*
51. MACDOWALL. *Myron Barton, Val Drummond, Barb Sather, Kelly Schnell, Alan Smith, Ione Surbey, Shirley Tait, Bob Tunstal.*
52. MAYVIEW. *Judith Graham.*
53. MEADOW LAKE. *Bill Caldwell, Janet Caldwell, Deirdre Todd, Phyllis Todd, William Todd, Bob Wilson, Ian Wilson.*
54. MOOSE JAW. *Al Gurnsey, Dan Sawatzky, Alan Smith.*
55. MOOSE MOUNTAIN. *Bob Cameron, Kathy Hedegard, Doyle Thomas, Val Thomas.*
56. MORSE. *Cam Barlow, Stella Enns, Mike Francis, Randel McCulloch, Joel Priebe, Ken Priebe, Myrna Priebe, Kathy Siemens, Ken Siemens, Lori Wilson.*
57. NIPAWIN. *Carol Blenkin, Vi Budd, Joyce Christiansen, Rose-Marie Cornand, Bert Dalziel, Joan Dalziel, Rick Douslin, Patty Gaertner, Shirley Harstad, Wally Harstad, Cary LeCuyer, Jennette LeCuyer, Jessie LeCuyer, Kyla LeCuyer, Megan LeCuyer, Wally Mollberg, Doug Pegg, Larry Trask.*
58. NISBET FOREST, NORTHWEST. *Sandra Jewell.*
59. NISBET FOREST, WEST. *Kim Clark, Kiri Clark, Shamara Clark, Suzanne Clark, Evelyn Marshal.*
60. OXBOW. *Rob Wapple.*
61. PIERCE LAKE. *Ted Hindmarsh, Richard Klauke, Lynn Paulus, Paul Paulus, Phil Shore.*
62. PIKE LAKE. *Alison Baudru, Lou Baudru, Ann Christensen, David Cook, Louise Cook, Gordon Crockford, Yvonne Cuttle, Lorne Duczek, Joan Feather, Daniel Giesbrecht, Bob Girvan, Michael Gollop, May Haga, Ron Jensen, Jeffrey Jensen, Mary Loewen, Audrey MacKenzie, Bill Mackenzie, Bob McNaughton, Ted Melville, Hilda Noton, Lynn Oliver, Scotty Oliver, Frank Roy, Nick Saunders, Marten Stoffel, Guy Wapple, Ruth Welsh, Bev Will, Michael Williams, Nancy Young.*
63. PRINCE ALBERT. *Ralph Abrey, Jim Bahr, L. Bonin, R. Bonin, Robbi Bonin, Kim Clark, Kiri Clark, Shamara Clark, Carman Dodge, Keith Dodge, Martin Donahue, Margaret Ferguson, Harold Fisher, Shelly Fisher, J. Germaine, Ham Greenwood, Ruth Griffiths, Sandra Jewell, Elaine McMillan, Cheryl Newman, Michael Newman, Francine Prins, Gil Reynolds, Teresa Reynolds, John Rye, Anita Stewart, Bonnie Tolley, Don Weidl.*
64. PRINCE ALBERT NATIONAL PARK. *Seth Cherry, Pat Dunn, Digit Guedo, Dusty Guedo, Herb Hodgson, Paulette Hodgson, Robyn Hufnagel, Eric Knight, Heather MacPhee, Fiona Moreland, Adam Pidwerbeski, Gregg Rutten, Terry Schneider, Theresa Stene, Rod Thompson, Lindy Thorpe, Jeff Weir.*
65. QU'APPELLE VALLEY DAM. *Daniel Giesbrecht, Jeff Jensen, Ron Jensen, Robert Johanson, Frank Roy, Nick Saunders, Stan Shadick, Marten Stoffel, Michael Williams.*
66. REGINA. *Lionel Bonneville, Lola Mae Crawley, Ron Crawley, Kathleen Donauer, Shirley Friel, Trevor Herriott, Dale Hjertaas, Phyllis Ilsley, Lucille Lipka, Kim Mann, Jim Nordquist, Catherine Parkinson, Wayne Pepper, Brett Quiring, Jacqueline Roy, Frank Switzer, May Switzer.*
67. ROULEAU. *Yvonne Bean, Len Larsen, Allan McGratten, Noreen McGratten, Patricia Sterzuk.*
68. ROUND LAKE (Qu'Appelle Valley). *Boyd Metzler, Mary Ward, Pat Ward.*
69. SALTCOATS. *Arden Bradford, Donna Bradford, Olga Brygadier, Walter Brygadier, Joan Farquharson, Walter Farquharson, Jim Jowsey, Shirley Jowsey, Gerri Knutson, Freda Laube, Laurie Murray, George Murray, Val Trowell, Rob Wilson.*
70. SASKATCHEWAN LANDING PROVINCIAL PARK. *Ryan Dudragne, Brian Knight, Dan Zazelenchuk, Ray Zeller.*

71. SASKATCHEWAN RIVER FORKS. Doug Boivin, Carman Dodge, *Don Weidl*.

76. SQUAW RAPIDS. *Ryan Dudragne*, Dan Sawatzky.

72. SASKATOON. Don Adams, Darlene Aikman, Ray Aikman, Tony Allen, Alison Baudru, Neva Bayliss, Helen Booker, Janny Bos, Barb Bradley, Harold Bradley, Heather Brenneman, Heinz Buchman, Annemarie Buchmann-Gerber, Mike Chorney, George Christenson, Jacqui Christenson, Dave Cook, Louise Cook, Paul Coutu, Vi Coutu, Ewen Coxworth, Gordon Crockford, Bill Davenport, Sonia Davenport, John Davies, Julia Davies, Arla Delver, Linda Delver, Lorne Duczek, Anne Dzus, Melanie Elliott, Tammy Elliott, Joan Feather, Sheila Flory, David Forbes, Cathy Fry, Joe Fry, Kamal Gabadage, Daniel Giesbrecht, Branimir Gjetvaj, Mike Gollop, Jean Gordon, Manu Grande, Bob Green, May Haga, Audrey Hall, Terry Hams, Collen Hardie, Peter Hardie, Kaija Harris, Erling Hertzum-Larsen, Grethe Hertzum-Larsen, Cathy Holtslander, Jeff Jensen, Julie Jensen, Ron Jensen, Richard Kerbes, Gordon Koshinsky, Margaret Koshinsky, Anna Leighton, Ted Leighton, Mary Loewen, Audrey MacKenzie, Bill MacKenzie, Bob McNaughton, Coleen Meldrum, Ted Melville, Penny Micklewright, Steve Micklewright, Larry Mitchell, Haley Mochoruk, Hilda Noton, Ken Nyeste, Asha Perera, Sylvia Raginski, Marella Rosta, Mary Jean Roy, Craig Salisbury, Lorriene Salisbury, Trish Santo, Nick Saunders, Sandra Savage, Marjorie Scharf, Maureen Scharf, Doug Schmeiser, Irene Schmeiser, Linda Schnedar, Albert Schondelmeier, Del Seto, Henry Shpyth, Jennifer Solem, Marten Stoffel, Gwen van der Kamp, Wendy Van Dijk, Hilda Voth, Heather Wagg, Guy Wapple, Shirley Wedgwood, George West, Bev Will, *Michael Williams*, Amy Wobeser, Gary Wobeser, Jim Wood, Judy Wood, Sandy Woynarski, Stan Woynarski, Dan Zazelenchuk, Norman Zlotkin.

73. SHAMROCK. Mike Francis, Hugh Henry, Randy McCulloch, Joel Prieb, Myrna Prieb, Lori Wilson.

74. SOMME. Edwin Brehmer, Irene Brehmer, Florence Chase, Lorne Chase, Mike Grywachski, *Ronald Hooper (Non-participating compiler)*.

75. SPINNEY HILL. *Ed Driver*, Margaret Driver.

77. SWIFT CURRENT. James Beattie, Jacquie Bolton, Norris Currie, Laurent Dudragne, Mary Ann Dudragne, Ryan Dudragne, Eric Emery, Arnie Ens, Donald Ferguson, Dave Green, Esther Green, Norma Hain, Dennis Hall, Linda Hall, *Hugh Henry*, Stephanie Kaduck, Connie Lendrum, Janet Payne, Kathryn Scott, Harold Steppuhn, Sue Steppuhn, Irene Stinson, Ron Welgan.

78. TOGO. Donna Dewores, Barb Elsasser, *Doug Elsasser*, Ed King, Louise King, William Koreliuk, Edith Mann, Fred Mann, Isabel Richie, Helen Tomochko, James Tomochko.

79. WEYBURN. Leo Belanger, Cecile Burr, Bob Cameron, *Ross Douglas*, John Ferrier, Glen Fleming, Millie Fleming, George Gillies, Cyril Marcotte, Alma McCormick, Doyle Thomas, Val Thomas, Kim Thorson, Myrt Thorson, Sid Trepoff.

80. WHITE BEAR. *Dan Zazelenchuk*.

81. WHITEWOOD. Cindy Ashfield, Joe Ashfield, Paul Ashfield, Tom Ede, Art Hintz, Joyce Kydd, Florence Luhtala, Sarah Manbourg, Jean Meadows, Ila Meszaros, *Boyd Metzler*, Harry Mitchell, Marilyn Mitchell, Donna Mohr, Rod Mohr, John Pollock, Lenora Santo, Carol Sawatzke, Wolfgang Sawatzke, Part Ward, Dawn Vennar, Diane Veresh, Ernie Veresh.

82. WINGARD-FORT CARLTON. *Myron Barton*, Rebecca Beam, Joshua Beam, Mitch Forseille, Julie Gustafson, Laurel Jensen, Ruth Prosser, Alan Smith.

83. YORKTON. Bill Anaka, Pat Fletcher, Cheryl Fraser, Joyce Gardner, Harley Large, Marge McKay, Gloria Rathgeber, Dorothy Riesz, Ray Riesz, *Geoff Rushowick*, Patrick Rushowick, Dorothy Skene.



Let children walk with Nature, let them see the beautiful blendings and communions of death and life, their joyous inseparable unity, as taught in woods and meadows, plains and mountains and streams of our blessed star, and they will learn that death is stingless indeed, and as beautiful as life.

- John Muir

Table 1-1 Weather and Snow Cover

Locality	Date	Minimum Temp (°C)	Maximum Temp (°C)	Minimum Wind (km/hr)	Maximum Wind (km/hr)	Minimum Snow (cm)	Maximum Snow (cm)	Sky A.M.	Sky P.M.
Archerwill	4 Jan 2010	-15	-13	6	6	10	10	cloudy	light snow
Avonlea	21 Dec 2009	-12	-10	0	5	15	25	partly cloudy	overcast
Bangor	29 Dec 2009	-33	-23	5	15	12	16	partly cloudy	mostly clear
Besnard Lake	27 Dec 2009	-12	9	2	5	10	30	clear	
Biggar	27 Dec 2009	-18	-12	10	16	0	10	mostly clear	partly cloudy
Birch Hills	17 Dec 2009	-22	-11	0	6	4	10	mostly clear	partly cloudy
Broadview	26 Dec 2009	-24	-17	15	20	10	15	partly cloudy	mostly clear
Bromhead	31 Dec 2009	-10	-10	8	18	0	5	clear	clear
Cabri	1 Jan 2010	-13	-15	20	30	10	15	heavy snow	heavy snow
Candle Lake	30 Dec 2009	-18	-15	10	20	10	20	mostly clear	clear
Cater	1 Jan 2010	-29	-18	2	20	10	15	mostly clear	partly cloudy
Christopher Lake	17 Dec 2009	-13	-15			4	6	mostly clear	
Churchbridge	30 Dec 2009	-14	-19	12	20	15	25	partly cloudy	light snow
Clark's Crossing	19 Dec 2009	-10	-7	0	11	2	10	overcast	overcast
Codette Lake	1 Jan 2010	-40	-28	0	2	10		clear	clear
Coronach	16 Dec 2009	-17	-7	2	10	3	5	clear	partly cloudy
Craven	19 Dec 2009	-11	-5	5	20	15	70	partly cloudy	partly cloudy
Creighton	14 Dec 2009	-34	-29	11	15	3	10	clear	mostly clear
Crooked Lake	14 Dec 2009	-26	-24	20	25	10	20	mostly clear	mostly clear
Crooked River	30 Dec 2009	-20	-15	2	5			clear	overcast
Cypress Hills P.P.	30 Dec 2009	-18	-15	0	20	45	50	light fog	light snow
Denholm	25 Dec 2009	-33	-22	2	2	8	11	mostly clear	mostly clear
Dorintosh	5 Jan 2010	-28	-21	2	5	6	10	mostly clear	mostly clear
Eastend	3 Jan 2010	-12	-13	0	10	10	40	overcast	partly cloudy
Edenwold	27 Dec 2009								
Endeavour	20 Dec 2009	-10	-9	0	5	5	12	cloudy	mostly clear
Estevan	4 Jan 2009			5	10	10	20	light snow	cloudy
Estuary North	2 Jan 2010	-15	-15	2		25		overcast	overcast
Fenton	18 Dec 2009	-12	-8			2	3		
Fort Qu'appelle	19 Dec 2009	-12	-8	0	0	5	6	cloudy	cloudy
Gardiner Dam	18 Dec 2009	-12	-9	0	20	0	10	moderate fog	mostly clear
Good Spirit Lake	17 Dec 2009	-22	-10	2	5	2	3	clear	clear
Grayson	24 Dec 2009	-18	-14	6	29	20	30	overcast	overcast
Harris	16 Dec 2009	-22	-15	0	20	0	5	partly cloudy	mostly clear
Hepburn	28 Dec 2009	-15	-10	10	15	7	7	light snow	light snow
Holbein	4 Jan 2010							clear	clear
Hudson Bay	27 Dec 2009	-21	-5	2	2	16	16	clear	partly cloudy
Imperial	20 Dec. 2009	-9	-5	2	19	2	4	overcast	mostly clear
Indian Head	27 Dec 2009	-11	-6	0	5	30	35	clear	mostly clear
Kelvington	30 Dec 2009	-20	-16	2	5	10	13	overcast	mostly clear
Kenaston	21 Dec 2009	-19	-12	0	0	12		clear	partly cloudy
Kenosee Lake	30 Dec 2009	-18	-15	10	30	30	50	overcast	overcast
Ketchen	26 Dec 2009	-23	-13	5	10	10	15	clear	clear
Kinistino	4 Jan 2010	-25	-17	0	0	4	8	cloudy	partly cloudy
Kinloch	18 Dec 2009	-19	-7	2	3	4	5	mostly clear	partly cloudy

Table 1-2 Weather and Snow Cover

Locality	Date	Minimum Temp (°C)	Maximum Temp (°C)	Minimum Wind (km/hr)	Maximum Wind (km/hr)	Minimum Snow (cm)	Maximum Snow (cm)	Sky A.M.	Sky P.M.
Kyle	28 Dec 2009	-13	-12	15	30	5	30	overcast	partly cloudy
La Ronge	29 Dec 2009	-16	-15	5	10	10	15	clear	clear
Leader North	27 Dec 2009	-22	-14	0	2	5	10	clear	clear
Love-Torch River	28 Dec 2009	-26	-20	0	5	15	20	clear	mostly clear
Luseland	27 Dec 2009	-17	-8	0	10	3	10	mostly clear	mostly clear
Macdowall	3 Jan 2010	-21	-18	2	5	6	9	clear	clear
Mayview	2 Jan 2010	-16	-10	5		14		cloudy	cloudy
Meadow Lake	26 Dec 2009	-10	-17	2	5	5	15		partly cloudy
Moose Jaw	18 Dec 2009	-16	-6	0	0	10	10	moderate fog	moderate fog
Moose Mountain	5 Jan 2010	-14	-7	2	12	20	30	overcast	light snow
Morse	19 Dec 2009	-7	-1	12	20	15	40	overcast	overcast
Nipawin	2 Jan 2010	-15	-14	11	25	5	20	overcast	overcast
Nisbet Forest NW	27 Dec 2009	-19	-12	0	8		10	clear	clear
Nisbet Forest West	29 Dec 2009	-14	-12	2	10	12	12	cloudy	cloudy
Oxbow	21 Dec 2009	-24	-14	1	3	10	25	clear	mostly clear
Pierce Lake	2 Jan 2010	-18	-16	0	17	15	25	mod. snow	overcast
Pike Lake	2 Jan 2010	-16	-13	9	17	5	20	partly cloudy	partly cloudy
Prince Albert	20 Dec 2009	-10	-8	15	15	2	5	overcast	overcast
Prince Albert N.P.	17 Dec 2009	-12	-10	6	8	2	4	overcast	overcast
Qu'Aappelle Dam	20 Dec 2009	-15	-7	7	10	15	25	cloudy	mostly clear
Regina	26 Dec 2009	-6	-15					partly cloudy	
Rouleau	27 Dec 2009	-17	-12	2	11	10	38	partly cloudy	mostly clear
Round Lake	16 Dec 2009	-22	-11	5	18	8	24	cloudy	cloudy
Saltcoats	4 Jan 2010							clear	clear
Sask. Landing P.P.	30 Dec 2009	-17	-16	10	20	5	30	cloudy	partly cloudy
Sask. River Forks	14 Dec 2009	-28	-25	20	20	2	5	clear	clear
Saskatoon	26 Dec 2009	-27	-16	5	13	5	10	mostly clear	mostly clear
Shamrock	27 Dec 2009	-13	-10	5	10	15	30	clear	clear
Somme	20 Dec 2009	-7		0	0	5	6	clear	clear
Spinney Hill	29 Dec 2009	-14	-11	25	35	2	8	overcast	light snow
Squaw Rapids	1 Jan 2010	-41	-34	2	10	15	40	clear	clear
Swift Current	19 Dec 2009	-9	-3	15	26	2	20	partly cloudy	cloudy
Togo	3 Jan 2010	-15	-14	5	10	10	15	cloudy	light snow
Weyburn	19 Dec 2009	-12	-8	15				light fog	overcast
White Bear	5 Jan 2010	-16	-14	20	30	10	40	mod. snow	light snow
Whitewood	28 Dec 2009	-21	-16	0	5	15	35	clear	clear
Wingard-Ft. Carlton	29 Dec 2009	-16	-13	0	5	10	15	overcast	overcast
Yorkton	22 Dec 2009	-14		15		8	12	overcast	overcast



What is a weed? A plant whose virtues have not yet been discovered
- Ralph Waldo Emerson

Table 2-1 Effort and Habitat Coverage. Wild Fruit Crop: p=poor, f=fair, g=good, e=excellent.

Locality	Effort						Habitat Coverage (%)													Wild Fruit Crop
	Participants	Km on foot	Hours on foot	Km by vehicle	Hours by vehicle	Hours at feeders	Evergreen forest	Mixedwood forest	Deciduous forest	Aspen grove/farmland	Aspen grove/prairie	Native prairie	Tame pasture	Farmland	Farmsteads	Urban	Open water	Riparian	Shield, bog,swamp	
Archerwill	11	1.0	0.5	132	4.5	40.0		30		10			5	50	5					p
Avonlea	4	2.0	1.0	136	6.5	8.0			5			5	5	65	5	15				e
Bangor	8			50	3.5	12.0				35	15			50						g
Besnard Lake	3	41.5	5.0	25	2.0		45	35	5										15	g
Biggar	9	12.0	10.3	454	12.8	6.0				20				55		25				g
Birch Hills	5	5.0	1.5	123	5.0	1.0			5	10			5	65	5	10				e
Broadview	5	1.5	1.0	156	6.0	4.0			20	40		5		25	5	5				g
Bromhead	2			128	5.0									95	5					
Cabri	1	1.0	0.5	152	3.5	0.5														g
Candle Lake	6	4.5	2.5	191	10.0	3.0	20	20	30							30				f
Cater	2	0.2	0.2	271	7.7	0.9	5	10	5	15			5	50	5	5				g
Christopher Lake	1	10.0	2.5					65		35										p
Churchbridge	9			101	8.0	49.0				40				40	15	5				f
Clark's Crossing	28	36.0	20.3	557	27.4	6.0	1		1	21	2	1		35	13	21	1	4		g
Codette Lake	4	2.0	3.0	125	4.5		15	15	15	25				15	10		5			
Coronach	2	3.0	1.5	140	6.0							5	5	55	5	15	15			
Craven	28	14.0	4.0	425	21.0					15		5	10	45	10	15				g
Creighton	2	1.0	1.0	147	5.5	1.5	10	10	10							10			60	e
Crooked Lake	2	0.5	0.5	191	3.5				30	20				20	10	10	10			g
Crooked River	7	0.5	0.5	52	6.0	8.0		40						40	20					g
Cypress Hills P.P.	13	8.0	4.5	15	1.0	1.0	40	40	8			10			2					g
Denholm	2	0.3	0.2	263	8.0	0.8				20			5	70		5				f
Dorintosh	2	6.0	2.0	65	5.0	3.0	60							40						g
Eastend	8	7.5	5.0	127	7.8	1.0	5		10		20	10		30	10	15				p
Edenwold	1			1	0.5	7.5														
Endeavour	1	5.0	2.0	35	3.0	2.0				60		20				20				p
Estevan	8	5.0	1.5	217	14.0				30			5		30	15	10	10			g
Estuary North	3	3.0	3.0	50	3.0	3.0			25			25		25	25					f
Fenton	3	5.0	2.0	135	5.3															g
Fort Qu'appelle	13	3.0	2.0	210	11.0	5.0			10	40				5		40	5			e
Gardiner Dam	8	17.0	14.8	424	14.0					10				56		3	23	8		g
Good Spirit Lake	5	1.0	1.0	111	6.0	2.0		5	5	5		5	5	30	5	40				f
Grayson	4	4.0	1.0	80	3.0	1.0			15	40			10		10	20	5			f
Harris	6	4.0	3.8	192	8.5	2.0				40				50		10				f
Hepburn	2			410	8.0					80	10		5		5					
Holbein	2					6.0														g
Hudson Bay	18	1.0	0.5	30	2.0	6.0		10						15	60	15				f
Imperial	1	1.0	0.3	223	6.7	0.0				1	1	1	2	92	2	1				p
Indian Head	25	2.0	0.5	144	6.0	56.0				10	5		10	70	4	1				g
Kelvington	2			37	1.5	8.5				30				60	10					g
Kenaston	1			286	6.0	1.0				85				5		10				
Kenosee Lake	2			100	4.0	1.0		5	40	10	5					40				g
Ketchen	1	1.0	1.5	50	1.5	6.0				30			20	20	20	10				
Kinistino	2	10.0	10.0	20	2.0	1.0		30					40	20	10					g
Kinloch	7	5.5	4.5	99	5.0	16.0	10	20	20	20					30					f

Table 2-2 Effort and Habitat Coverage. Wild Fruit Crop: p=poor, f=fair, g=good, e=excellent.

	Effort						Habitat Coverage (%)														
	Participants	Km on foot	Hours on foot	Km by vehicle	Hours by vehicle	Hours at feeders	Evergreen forest	Mixedwood forest	Deciduous forest	Aspen grove/farmland	Aspen grove/prairie	Native prairie	Tame pasture	Farmland	Farmsteads	Urban	Open water	Riparian	Shield, bog,swamp	Wild Fruit Crop	
Kyle	6	8.0	5.0	283	30.0	1.0					2	26	5	63	1	1		2		f	
La Ronge	6			64	3.0	2.5	60	10								30				e	
Leader North	1	8.0	4.0	50	2.0	2.0						50		25	25					f	
Love-Torch River	19			219	10.0	26.0	10	10		60					10	10				f	
Luseland	7	7.0	5.0	215	6.5	4.0				30	5	5	10	30	10	10				f	
Macdowall	8			119	8.0	7.0	5	10	5	10	10			50	10					e	
Mayview	1					6.0		100													
Meadow Lake	7	8.0	2.0	225	3.0	5.0		40						30		30				f	
Moose Jaw	3	5.0	3.0	133	5.0	8.0			10					20		70					
Moose Mountain	4		0.3	194	8.5				70			2		20	3	5				g	
Morse	10	4.0	1.5	380	24.8	1.0							3	90	7					g	
Nipawin	18	20.0	6.0	150	28.0	30.0	20	10		5				30	10	20	5			f	
Nisbet Forest NW	1	4.0	4.0			3.0		50							50					g	
Nisbet Forest West	5	2.0	2.0	148	3.0	5.0	5	5		80					5	5				g	
Oxbow	1	1.5	2.5	233	5.5	1.0				35		10	10	15	5	25				g	
Pierce Lake	5	4.0	2.0	120	5.3			65		25					5		5			g	
Pike Lake	31	40.0	27.3	538	27.3	6.8			15	10			5	15	15	40				f	
Prince Albert	28	26.0	12.8	432	25.3	4.0	20			20				10	5	45				g	
Prince Albert N.P.	17	78.0	33.5	11	2.0			95								5					
Qu'Appelle Dam	9	6.0	7.9	531	15.0				20	15	10	5	5	15	5	20	5			f	
Regina	17	20.0	8.5	403	17.0	7.0			5				5	30	10	50					
Rouleau	5	5.0	3.0	80	5.0	2.0								65	5	10		20		p	
Round Lake	3	0.5	0.5	189	5.0	1.0			25	40				20	10		5			g	
Saltcoats	14	4.0	2.0	148	6.0	7.0				90						10				g	
Sask. Landing P.P.	4	5.0	3.0	210	13.0					20		25	5	39	1			10		f	
Sask. River Forks	3	3.0	1.5	89	5.0		20	20	20	10			5	15	5		5			f	
Saskatoon	109	124	66.6	809	46.5	123	1	1	1	16	3	1	1	8	5	57	2	4		f	
Shamrock	6	1.5	2.0	276	15.0									75	20	5					
Somme	5	2.0	1.0	32	3.0	3.0		20		20					50	10				e	
Spinney Hill	2	3.0	1.5	151	7.0				35	25		5		35						f	
Squaw Rapids	2	0.5	0.5	68	4.0			93						2			5			g	
Swift Current	23	27.0	16.0	325	18.5	3.0								40	10	50				g	
Togo	11	2.0	1.0	50	2.0	7.0	10	20	10	20	20	10		10							
Weyburn	15			396	15.0									85		15					
White Bear	1	2.0	1.0	115	5.5							20	5	73	1			1		f	
Whitewood	23	8.0	6.0	434	14.5	29.0				30					10	60				e	
Wingard-Ft. Carlton	8			89	3.5	8.0		5	5	15	5		5	35	30					g	
Yorkton	12			43	7.0	6.0					10				10	80				g	



Nature abhors a vacuum, and if I can only walk with sufficient carelessness I am sure to be filled.
- Henry David Thoreau

Table 3-1 Species found on 10 or more counts () = seen during Count Period (CP)

Map Number	1	2	3	4	5	6	7	8	9	10	11
	Archerwill 4 Jan 2010	Avonlea 21 Dec 2009	Bangor 29 Dec 2009	Besnard Lake 27 Dec 2009	Biggar 27 Dec 2009	Birch Hills 17 Dec 2009	Broadview 26 Dec 2009	Bromhead 31 Dec 2009	Cabri 1 Jan 2010	Candle Lake 30 Dec 2009	Cater 1 Jan 2010
Species											
Canada Goose											
Mallard					7						
Common Goldeneye											
Gray Partridge		33									
Ring-necked Pheasant								52	12		
Ruffed Grouse	4						1			1	
Sharp-tailed Grouse		1	21		13		33	32	63		
Bald Eagle			3		1						1
Northern Goshawk		1				1				1	
Golden Eagle									1		
Merlin		1									
Rock Pigeon	10	90	7		247	21	15	11			16
Eurasian Collared-Dove					3						
Great Horned Owl		1	1		2		1	1			(1)
Snowy Owl		3				(1)		1			
Downy Woodpecker	8	2	5	2	4	2	3				2
Hairy Woodpecker	8	(1)	8	1	2	4	8			5	1
Northern Flicker											
Pileated Woodpecker				1							
Northern Shrike											1
Gray Jay	(2)			11						6	(2)
Blue Jay	21				2	3	1			3	3
Black-billed Magpie	10	16	25	(2)	116	45	20		12	15	10
Common Raven	22		33	36	51	24	12		1	150	192
Horned Lark		94			253	(2)		332	216		
Black-capped Chickadee	43	(1)	32	10	21	69	32			27	26
Boreal Chickadee	(2)			23						16	
Red-breasted Nuthatch	4	2	1	2	44	5	2			6	(2)
White-breasted Nuthatch	2	2	2			2	1				2
Brown Creeper											
American Robin			3			1	2				
European Starling		24	7			26					
Bohemian Waxwing						5					
Cedar Waxwing					37						
Dark-eyed Junco					(1)						
Snow Bunting	685	50	193		631	7	367	749	385		748
Pine Grosbeak	89			15						16	68
House Finch		2			28	1	4				
White-winged Crossbill				8	24					42	
Common Redpoll	21	(1)	4	196	46	36			172	16	713
Hoary Redpoll				31	2						
Pine Siskin	2				24	2					
American Goldfinch						27					
Evening Grosbeak	6										
House Sparrow		160	167		450	126	202	22	174		7
Total Birds Count Day	935	482	513	348	2009	414	707	1268	1036	309	1790
Total Birds only in CP	5	3	0	2	1	4	0	0	0	2	5
Total Species Count Day	15	16	17	15	23	22	18	11	9	15	14
Total Species only in CP	3	3	0	1	1	3	0	0	0	1	3

Table 3-2 Species found on 10 or more counts () = seen during Count Period (CP)

Map Number	12	13	14	15	16	17	18	19	20	21	22
	Christopher Lake 17 Dec 2009	Churchbridge 30 Dec 2009	Clark's Crossing 19 Dec 2009	Codette Lake 1 Jan 2010	Coronach 16 Dec 2009	Craven 19 Dec 2009	Creighton 14 Dec 2009	Crooked Lake 14 Dec 2009	Crooked River 30 Dec 2009	Cypress Hills P.P. 30 Dec 2009	Denholm 25 Dec 2009
Species											
Canada Goose											
Mallard					6243			18			
Common Goldeneye			11		12						
Gray Partridge			12			7					(10)
Ring-necked Pheasant					16	1					
Ruffed Grouse						1			1		
Sharp-tailed Grouse		9	35		49	6	9	1		10	
Bald Eagle			1		3			1		2	
Northern Goshawk			1	1							
Golden Eagle											
Merlin						1					
Rock Pigeon		6	311	1		73	55	13			18
Eurasian Collared-Dove											
Great Horned Owl			4		2	(1)					1
Snowy Owl			3		2						
Downy Woodpecker	2	4	9	2	1	14	2	1	5	3	3
Hairy Woodpecker		6	13	4		14	2	2	2	3	2
Northern Flicker			3			4					
Pileated Woodpecker				2							
Northern Shrike			1					(1)			1
Gray Jay				2			3		3		
Blue Jay		3	11	10		8		3	9		
Black-billed Magpie	4	4	307	41	1	138	3	10	24	18	43
Common Raven	6	15	87	110		30	117	13	14	6	20
Horned Lark			2		1301					2	24
Black-capped Chickadee	26	46	185	30		191	3	68	20	57	9
Boreal Chickadee	1										
Red-breasted Nuthatch	2	3	36		2	15	2	1	5	50	
White-breasted Nuthatch	3	4	1	1		21		2	4		
Brown Creeper						1				1	
American Robin		2	2			2		34			
European Starling			28			12					
Bohemian Waxwing						45	4			100	
Cedar Waxwing		15	17								
Dark-eyed Junco		1	3	2		1	4		2		
Snow Bunting		83	62		874	559		325			1782
Pine Grosbeak	(11)			43			4		20		
House Finch			3			12					
White-winged Crossbill			37	16			13				
Common Redpoll	1		12	103			268			4	18
Hoary Redpoll							27		6		(3)
Pine Siskin	52		39	6					1		
American Goldfinch											
Evening Grosbeak	2			26					82		
House Sparrow		60	1706	25	38	188		3	38	9	21
Total Birds Count Day	99	261	3031	427	16554	1346	518	517	236	282	1942
Total Birds only in CP	11	0	0	0	0	1	0	1	1	0	14
Total Species Count Day	10	15	31	20	16	25	17	18	16	17	12
Total Species only in CP	1	0	0	0	0	1	0	1	1	0	3

Table 3-3 Species found on 10 or more counts

() = seen during Count Period (CP)

Map Number	23	24	25	26	27	28	29	30	31	32	33
	Dorintosh 5 Jan 2010	Eastend 3 Jan 2010	Edenwold 27 Dec 2009	Endeavour 20 Dec 2009	Estevan 4 Jan 2010	Estuary North 2 Jan 2010	Fenton 18 Dec 2009	Fort Qu'appelle 19 Dec 2009	Gardiner Dam 18 Dec 2009	Good Spirit Lake 17 Dec 2009	Grayson 24 Dec 2009
Species											
Canada Goose											
Mallard					595			3	1108		6
Common Goldeneye					130			1	98		1
Gray Partridge		(12)	9		9				33		
Ring-necked Pheasant		2			49	43					
Ruffed Grouse	4			(1)			1	(1)		(4)	
Sharp-tailed Grouse	3	16			68	6		15	19		2
Bald Eagle		(2)			(3)				27	1	
Northern Goshawk		1			(1)	1					
Golden Eagle		2		(1)	1	1			4		
Merlin					(1)			(1)			
Rock Pigeon		7		18	22	2	70	62	100		
Eurasian Collared-Dove		5			21			2			
Great Horned Owl					1	1	1		9		1
Snowy Owl		1						(1)	3		
Downy Woodpecker	2	5	1	2	5	1	4	8	3	3	2
Hairy Woodpecker	2		2	2	2	2	3	8	2	2	2
Northern Flicker					5			(1)	2		
Pileated Woodpecker						1	1	1			
Northern Shrike					1			(1)			
Gray Jay	4			2							
Blue Jay	5		2	4	(2)	5	2	6		2	
Black-billed Magpie	4	66	2	8	12	17	98	12	79	36	28
Common Raven	43			30	(1)		54	32	18	47	15
Horned Lark		235			325	150		2	51		
Black-capped Chickadee	14	33	5	17	18	7	31	77	26	24	42
Boreal Chickadee							1				
Red-breasted Nuthatch	3	13	1		11	1	4	5	11	(1)	
White-breasted Nuthatch	1			2	14			7		3	1
Brown Creeper		1			(2)				1		
American Robin					7		4	33			15
European Starling				6				24	9		
Bohemian Waxwing										23	
Cedar Waxwing					(4)	10	7		26		
Dark-eyed Junco		2			11			5			
Snow Bunting			20	(50)	310	760	4	(4)	443		106
Pine Grosbeak	10			20		15				2	
House Finch					3		2	(2)			
White-winged Crossbill											
Common Redpoll	48	9		(15)			3		7		
Hoary Redpoll	4										
Pine Siskin		6	7		6		2	20			
American Goldfinch					4			8			
Evening Grosbeak	15			55							
House Sparrow		16	100	20	103	47	211	238	554	13	6
Total Birds Count Day	162	424	152	186	2816	1070	505	574	2836	156	229
Total Birds only in CP	0	14	0	67	14	0	0	13	0	5	0
Total Species Count Day	15	19	12	13	32	18	20	23	33	11	14
Total Species only in CP	0	2	0	4	7	0	0	8	0	2	0

Table 3-4 Species found on 10 or more counts () = seen during Count Period (CP)

Map Number	34	35	36	37	38	39	40	41	42	43	44
	Harris 16 Dec 2009	Hepburn 28 Dec 2009	Holbein 4 Jan 2010	Hudson Bay 27 Dec 2009	Imperial 20 Dec. 2009	Indian Head 27 Dec 2009	Kelvington 30 Dec 2009	Kenaston 21 Dec 2009	Kenosee Lake 30 Dec 2009	Ketchen 26 Dec 2009	Kinistino 4 Jan 2010
Species											
Canada Goose											
Mallard						2					
Common Goldeneye											
Gray Partridge	11					6		(8)			
Ring-necked Pheasant											
Ruffed Grouse				3		6	5			10	2
Sharp-tailed Grouse	18	(10)		4	39	19		-8			
Bald Eagle	2			1	2	5					
Northern Goshawk											
Golden Eagle	1										
Merlin											
Rock Pigeon	93	21		1	54	129	2	15		16	
Eurasian Collared-Dove											
Great Horned Owl	2	1									
Snowy Owl	1				2	1					
Downy Woodpecker	2	1	3	6	1	23	2			3	1
Hairy Woodpecker	4		2	9		21	5	1	2	4	1
Northern Flicker	1										
Pileated Woodpecker							1				
Northern Shrike									1		
Gray Jay				3							2
Blue Jay			5	32		20	7		11	4	6
Black-billed Magpie	109	19	2	7	29	41	5	21	6	18	23
Common Raven	14	24	1	58	10	47	7	5	3	7	8
Horned Lark	45				24	9	4	2			
Black-capped Chickadee	22	5	7	92		125	6	5	60	10	10
Boreal Chickadee			2	2							
Red-breasted Nuthatch	8		2	7	2	24	2		7		
White-breasted Nuthatch			3	6		16			7		
Brown Creeper											
American Robin						26					
European Starling					3	2				8	
Bohemian Waxwing				50			26				
Cedar Waxwing				50							
Dark-eyed Junco						13	5				
Snow Bunting	1612	50		600	8	36	919	9		11	
Pine Grosbeak	1		7	57			3			12	12
House Finch	8										
White-winged Crossbill							10				
Common Redpoll		110	23	24			21	33		24	23
Hoary Redpoll			1								
Pine Siskin	2	15		39		79			15		
American Goldfinch									5		
Evening Grosbeak			32	155						(3)	8
House Sparrow	357	12		10	145	229	3	74		62	
Total Birds Count Day	2313	258	90	1224	319	882	1033	166	117	189	96
Total Birds only in CP	0	10	0	0	0	0	0	16	0	3	0
Total Species Count Day	20	10	13	25	12	24	18	10	10	13	11
Total Species only in CP	0	1	0	0	0	0	0	2	0	1	0

Table 3-5 Species found on 10 or more counts () = seen during count period (CP)

Map Number	45	46	47	48	49	50	51	52	53	54	55
	Kinloch 18 Dec 2009	Kyle 28 Dec 2009	La Ronge 29 Dec 2009	Leader North 27 Dec 2009	Love-Torch River 28 Dec 2009	Luseland 27 Dec 2009	Macdowall 3 Jan 2010	Mayview 2 Jan 2010	Meadow Lake 26 Dec 2009	Moose Jaw 18 Dec 2009	Moose Mountain 5 Jan 2010
Species											
Canada Goose											
Mallard											
Common Goldeneye			(1)								
Gray Partridge		95		7	9	(7)				102	
Ring-necked Pheasant	20			31							
Ruffed Grouse			(4)		4		(4)	1			
Sharp-tailed Grouse	(2)	3			(3)	4	15			2	29
Bald Eagle					(1)						
Northern Goshawk							2				
Golden Eagle											
Merlin		1									
Rock Pigeon	5	260			(4)	63	5		21	58	33
Eurasian Collared-Dove						4				(1)	
Great Horned Owl	1	13				3	3				
Snowy Owl		8		1		2					
Downy Woodpecker	5	1	(1)	2	17	1	5		1	1	
Hairy Woodpecker	10		1		18		3	1		2	1
Northern Flicker				1		1				1	1
Pileated Woodpecker	3			1	(1)		1				1
Northern Shrike	1								1		
Gray Jay	10		2		13		(1)	2	3		
Blue Jay	26		2		20	2	14	1			1
Black-billed Magpie	25	195		16	94	71	32		12	9	34
Common Raven	62	5	527	2	134	7	36		77		53
Horned Lark		80		12		106					
Black-capped Chickadee	34	4	18	2	93	7	91	4	8	5	27
Boreal Chickadee			4		1			2			
Red-breasted Nuthatch	4	1	6		15	3	2	4	2	8	1
White-breasted Nuthatch	9				8		9			2	1
Brown Creeper	1										
American Robin											3
European Starling			34	6	9						
Bohemian Waxwing	11	(14)	(7)	35	94		50				
Cedar Waxwing										7	
Dark-eyed Junco					3					12	
Snow Bunting	(26)	1520			1433	51	153		21	66	40
Pine Grosbeak	44	(1)	87		86		33	2	17		
House Finch		1			2	17				11	
White-winged Crossbill	4				12		(7)				
Common Redpoll	61	30	241	20	300	39	40		20		
Hoary Redpoll	7			10	1						
Pine Siskin		14			33	5	39			9	40
American Goldfinch							23				20
Evening Grosbeak	35		38		141		49	7			
House Sparrow		1270		12	51	77			11	202	10
Total Birds Count Day	378	3503	963	158	2592	464	606	24	195	497	295
Total Birds only in CP	29	15	19	0	12	7	13	0	0	1	0
Total Species Count Day	21	19	13	15	25	19	21	9	13	16	16
Total Species only in CP	3	2	9	0	7	1	4	0	0	1	0

Table 3-6 Species found on 10 or more counts () = seen during Count Period (CP)

Map Number	56	57	58	59	60	61	62	63	64	65	66
	Morse 19 Dec 2009	Nipawin 2 Jan 2010	Nisbet Forest NW 27 Dec 2009	Nisbet Forest W 29 Dec 2009	Oxbow 21 Dec 2009	Pierce Lake 2 Jan 2010	Pike Lake 2 Jan 2010	Prince Albert 20 Dec 2009	Prince Albert N.P. 17 Dec 2009	Qu'appelle Dam 20 Dec 2009	Regina 26 Dec 2009
Species											
Canada Goose								2			98
Mallard						3		1		75	132
Common Goldeneye						5				17	(1)
Gray Partridge	390	6									174
Ring-necked Pheasant	12				10						
Ruffed Grouse		2				2	4	1	5		
Sharp-tailed Grouse	102	6			38		83			151	9
Bald Eagle	1	2			1		1	2		1	
Northern Goshawk	1	1					1				
Golden Eagle	7									1	
Merlin	4							1			1
Rock Pigeon	205				51		74	598		43	786
Eurasian Collared-Dove										15	
Great Horned Owl	18	1			2		4			6	1
Snowy Owl	7										7
Downy Woodpecker	(2)	9	2	2	3	3	35	10	1	1	12
Hairy Woodpecker	1	6	2	6	2	2	30	10	4	7	2
Northern Flicker							6			1	4
Pileated Woodpecker							4		6		
Northern Shrike		1			1		4				
Gray Jay		4	2	1		3	(1)	13	7		
Blue Jay		15	2	12		7	12	26	6		2
Black-billed Magpie	50	37	1	15	11	9	131	119	8	101	9
Common Raven	1	256	4	59	39	12	71	395	27	25	7
Horned Lark	524				13						
Black-capped Chickadee	1	57	33	34	29	10	552	140	45	38	42
Boreal Chickadee						12		8	32		
Red-breasted Nuthatch	1	24	1		5	2	22	3	2	10	38
White-breasted Nuthatch		3	2	1	4	3	18	1	1		10
Brown Creeper							1				
American Robin	1			(10			74			53	
European Starling	43	3			3		21				6
Bohemian Waxwing	(30)	23		(200)			101	21		1	1
Cedar Waxwing							12	104			
Dark-eyed Junco		1									21
Snow Bunting	2304	120		1006	175	200	1728	1		124	2
Pine Grosbeak		29	15	22		17	5	14	2	20	
House Finch	8						3	7			30
White-winged Crossbill						30	12	6		2	2
Common Redpoll	(16)	154		15		18	69	25	139	8	
Hoary Redpoll			5								
Pine Siskin	(5)	193	1		9		3	161	1	1	32
American Goldfinch				3	12			1			
Evening Grosbeak		140		24			2	72			
House Sparrow	1296	92			166		587	163		184	1231
Total Birds Count Day	4981	1189	74	1200	574	338	3677	1924	295	893	2665
Total Birds only in CP	53	1	2	201	0	0	1	0	0	0	3
Total Species Count Day	23	28	12	13	19	17	32	31	17	26	30
Total Species only in CP	4	1	2	2	0	0	1	0	0	0	3

Table 3-7 Species found on 10 or more counts () = seen during Count Period (CP)

Map Number	67	68	69	70	71	72	73	74	75	76	77
	Rouleau 27 Dec 2009	Round Lake 16 Dec 2009	Saltcoats 4 Jan 2010	Sask. Landing P.P. 30 Dec 2009	Sask. River Forks 14 Dec 2009	Saskatoon 26 Dec 2009	Shamrock 27 Dec 2009	Somme 20 Dec 2009	Spinney Hill 29 Dec 2009	Squaw Rapids 1 Jan 2010	Swift Current 19 Dec 2009
Species											
Canada Goose		4				851					
Mallard		32				19					3
Common Goldeneye		1				222				99	
Gray Partridge	39			10		14	202	10			38
Ring-necked Pheasant							6				14
Ruffed Grouse		(1)	7		1	1		4			
Sharp-tailed Grouse		1	4	34		3	15	6	2	2	53
Bald Eagle		2				1		3			1
Northern Goshawk						2	1				
Golden Eagle				2			2				
Merlin						4					
Rock Pigeon	37	26	7	176		1749	26		5		317
Eurasian Collared-Dove						4					116
Great Horned Owl	2		(1)	3		4	9				4
Snowy Owl	3		1	5			5				3
Downy Woodpecker		7	6		2	31		3	1	1	2
Hairy Woodpecker		7	10		4	23		3			
Northern Flicker						36			1		7
Pileated Woodpecker			2		1			(1)		1	
Northern Shrike			(1)		1	1					
Gray Jay								4			
Blue Jay		8	12		1	15		12	7	6	
Black-billed Magpie	3	9	19	62	29	370	25	11	30	1	100
Common Raven	1	41	37		15	108	1	12	6	21	
Horned Lark		2	5	38		11	290		1		35
Black-capped Chickadee		46	39	13	19	808		20	19	10	17
Boreal Chickadee					6					1	
Red-breasted Nuthatch		3	13		2	263		2	3	2	55
White-breasted Nuthatch		15	8			2		3			3
Brown Creeper			(1)			2					
American Robin		16	3	1		19					2
European Starling	43	1			2	61	8				8
Bohemian Waxwing				123	3	34					
Cedar Waxwing			6			93					
Dark-eyed Junco			10			14					
Snow Bunting	100	425	17	1410	3	348	38	(60)	147	467	174
Pine Grosbeak					9		1	45	6	7	
House Finch						383					12
White-winged Crossbill					3	21			24	64	
Common Redpoll			3	81	79	104		46	3	246	15
Hoary Redpoll						1				1	
Pine Siskin		12	35		12	292	2	5			31
American Goldfinch					1	(2)					
Evening Grosbeak					6			42			
House Sparrow	42	33	117	420	30	3206	1105	30	38		1182
Total Birds Count Day	270	693	363	2378	232	9191	1736	261	301	933	2199
Total Birds only in CP	0	1	3	1	0	5	0	61	0	0	0
Total Species Count Day	9	22	22	14	24	43	16	18	17	17	25
Total Species only in CP	0	1	3	1	0	3	0	2	0	0	0

Table 3-8 Species found on 10 or more counts () = seen during Count Period (CP)

Map Number	78	79	80	81	82	83				
Species	Togo 3 Jan 2010	Weyburn 19 Dec 2009	White Bear 5 Jan 2010	Whitewood 28 Dec 2009	Wingard-Ft Carlton 29 Dec 2009	Yorkton 22 Dec 2009	Totals Count Day	Totals only in Count	#Counts count day	# Counts only in count
Canada Goose							10158	0	13	0
Mallard						68	8315	0	16	0
Common Goldeneye							597	2	11	2
Gray Partridge		104	39		(8)		1359	45	23	5
Ring-necked Pheasant		5	(1)				273	1	14	1
Ruffed Grouse				(1)	2		73	16	24	7
Sharp-tailed Grouse		54	20	8	12		1147	23	48	4
Bald Eagle				(1)			65	7	23	4
Northern Goshawk							15	1	13	1
Golden Eagle		1					23	1	11	1
Merlin		1					14	2	8	2
Rock Pigeon	26	91	105	113		124	6510	4	56	1
Eurasian Collared-Dove		17					187	1	9	1
Great Horned Owl			2	1			106	3	32	3
Snowy Owl		6	1				66	2	21	2
Downy Woodpecker	12	2		17	5	10	362	3	70	2
Hairy Woodpecker	13	1		17	8	10	365	1	64	1
Northern Flicker				2			76	1	16	1
Pileated Woodpecker	1			2	1		31	2	18	2
Northern Shrike	1			(1)			16	4	13	4
Gray Jay							100	6	21	4
Blue Jay	24			25	14	2	462	2	52	1
Black-billed Magpie	4	1	36	129	24	9	3345	2	79	1
Common Raven	18			48	15	124	3608	1	70	1
Horned Lark		43	20	2			4253	2	33	1
Black-capped Chickadee	66		1	242	44	44	4193	1	75	1
Boreal Chickadee							111	2	14	1
Red-breasted Nuthatch	2	4		41		18	845	3	64	2
White-breasted Nuthatch	9	2		15	5	5	246	0	47	0
Brown Creeper				(1)			8	4	7	3
American Robin	2			25		2	332	1	24	1
European Starling		4	8	28		28	465	0	29	0
Bohemian Waxwing					100		850	251	20	4
Cedar Waxwing	45			10		66	505	4	15	1
Dark-eyed Junco		1		3		(3)	114	4	19	2
Snow Bunting	136	62	98	272	230		25259	140	60	4
Pine Grosbeak	44				4		903	12	38	2
House Finch				2		1	540	2	21	1
White-winged Crossbill							330	7	18	1
Common Redpoll	24				39	20	3774	32	51	3
Hoary Redpoll							96	3	12	1
Pine Siskin	72			56	29	141	1545	5	42	1
American Goldfinch				16	16		136	2	12	1
Evening Grosbeak					100	17	1054	3	22	1
House Sparrow	89	184	827	262	62	323	18898	0	65	0
Total Birds Count Day	589	674	1157	1345	712	1018	102358			
Total Birds only in CP	0	0	2	5	8	2		638		
Total Species Count Day	19	20	11	27	20	19	91			
Total Species only in CP	0	0	2	5	1	1		2		

Table 4-1 Species found in fewer than 10 counts

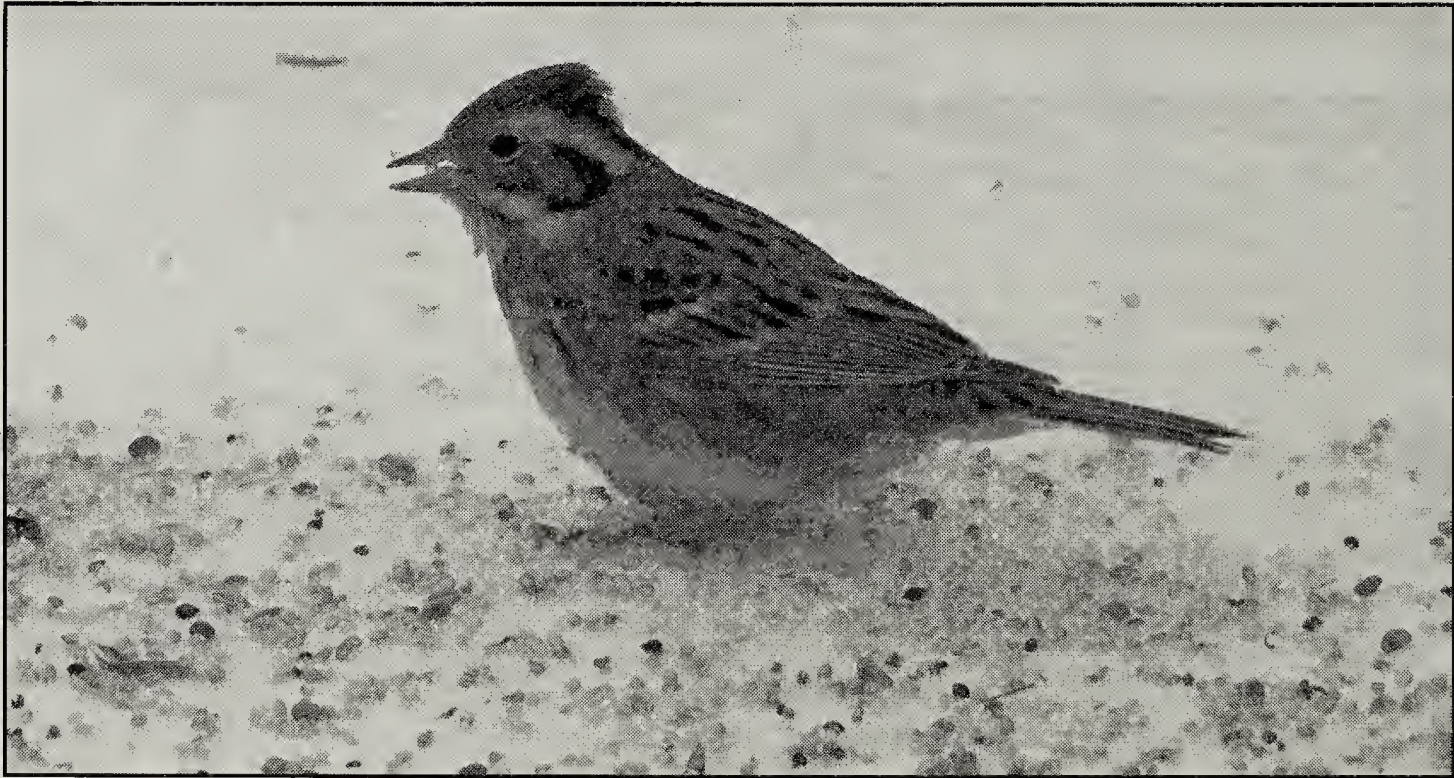
Species	Locality and Number (*=Count Period)
Cackling Goose	Clark's Crossing (1), Estevan (1)
Blue-winged Teal	Regina (1)
Green-winged Teal	Coronach (1), Crooked Lake (1)
Redhead	Gardiner Dam (5)
Lesser Scaup	Fort Qu'Appelle (1), Gardiner Dam (11), Indian Head (1), Prince Albert (3), Regina (1)
Bufflehead	Gardiner Dam (1)
Hooded Merganser	Estevan (3)
Common Merganser	Gardiner Dam (161), La Ronge (1*), Regina (1*), Round Lake (1), Saskatoon (1), Squaw Rapids (3)
Red-breasted Merganser	Gardiner Dam (1)
Spruce Grouse	La Ronge (1*), Love-Torch River (1), Prince Albert N.P. (2)
Willow Ptarmigan	Besnard Lake (2), Candle Lake (2*), Creighton (1), La Ronge (1*)
Wild Turkey	Broadview (2), Cypress Hills P.P. (4), Whitewood (2)
Sharp-shinned Hawk	Archerwill (1*), Craven (1), Swift Current (1)
Cooper's Hawk	Birch Hills (1), Saskatoon (1*), Whitewood (1*)
Red-tailed Hawk	Regina (1*)
Rough-legged Hawk	Gardiner Dam (1), Love-Torch River (1*)
American Kestrel	Edenwold (1), Saskatoon (1*)
Gyr Falcon	Bromhead (1), Gardiner Dam (1)
Peregrine Falcon	Luseland (1)
Prairie Falcon	Bromhead (1), Estevan (1), Kyle (1), Morse (3), Qu'Appelle Dam (1), Saskatchewan Landing P.P. (1*), White Bear (1*)
American Coot	Estevan (1)
Glaucous Gull	Gardiner Dam (1)
Mourning Dove	Cypress Hills P.P (6), Swift Current (6).
Northern Hawk Owl	Candle Lake (4), Codette Lake (1), Hudson Bay (1), Love-Torch River (1*), Meadow Lake (1), Prince Albert (1), Squaw Rapids (1),
Great Gray Owl	Birch Hills (1*), Hudson Bay (1), Kinloch (1*), Macdowall (1)
Short-eared Owl	Biggar (1), Birch Hills (5), Denholm (1*), Estevan (3), Fenton (2), Nipawin (2), Sask. River Forks (1), Saskatoon (2), Wingard-Fort Carlton (1)
Northern Saw-whet Owl	La Ronge (1*)
American Three-toed Woodpecker	Candle Lake (1), Nisbet Forest NW (1*), Prince Albert N.P. (7), Sask. River Forks (1), Spinney Hill (1)
Black-backed Woodpecker	Besnard Lake (2), Codette Lake (1), Love-Torch River (1*), Macdowall (1*), Nisbet Forest NW (1*), Sask. River Forks (1)
American Crow	Craven (1), La Ronge (2), Regina (2), Saskatoon (5), Togo (1)
Golden-crowned Kinglet	Gardiner Dam (1), La Ronge (2*), Qu'Appelle Dam (4), Round Lake (1), Saskatoon (4),
Townsend's Solitaire	Eastend (1), Qu'Appelle Dam (3)
Varied Thrush	Regina (1)
Chipping Sparrow	Cypress Hills P.P (2), Hudson Bay (6).

Table 4-2 Species found in fewer than 10 counts

Species	Locality and Number (*=Count Period)
Song Sparrow	Nipawin (1)
White-throated Sparrow	Birch Hills (1), Eastend (3), Nipawin (1), Saskatoon (1*)
Harris's Sparrow	Broadview (1), Crooked River (1*), Edenwold (2), Saskatoon (1)
White-crowned Sparrow	Prince Albert (5), Wingard-Fort Carlton (1)
Lapland Longspur	Bromhead (66), Coronach (2), Spinney Hill (7), Weyburn (90), Whitewood 1
Rustic Bunting	Creighton (1)
Rose-breasted Grosbeak	Yorkton (6)
Red-winged Blackbird	La Ronge (1), Nipawin (1*)
Rusty Blackbird	Pike Lake (2)
Brewer's Blackbird	Regina (1)
Common Grackle	Estevan (1), Kyle (1), Morse (1), Weyburn (1)
Gray-crowned Rosy-Finch	Kenaston (1)
Purple Finch	Crooked Lake (14), Fort Qu'Appelle (2*), Pike Lake (5), Saltcoats (2), Whitewood (4)
Red Crossbill	Besnard Lake (8), Cypress Hills P.P. (5), Prince Albert (10), Saskatoon (42)

Table 5 Birds not identified to species

Category	Locality and Number
Duck sp.	Saskatoon (14)
Small Accipiter	Saskatoon (1)
Hawk sp.	Clark's Crossing (1)
Woodpecker sp.	Nisbet Forest Northwest (4), Saskatoon (1)



Rustic Bunting observed during the Creighton count. This photo was taken on 20 February 2010, several days before its last sighting at the feeder of Brenda and Harvey Schmidt. Rustic Buntings (Emberiza rustica) are native to northern Europe and Asia and are regular visitors to the western Aleutian Islands of Alaska, but to have an individual make it as far inland as Saskatchewan is a rare treat indeed.

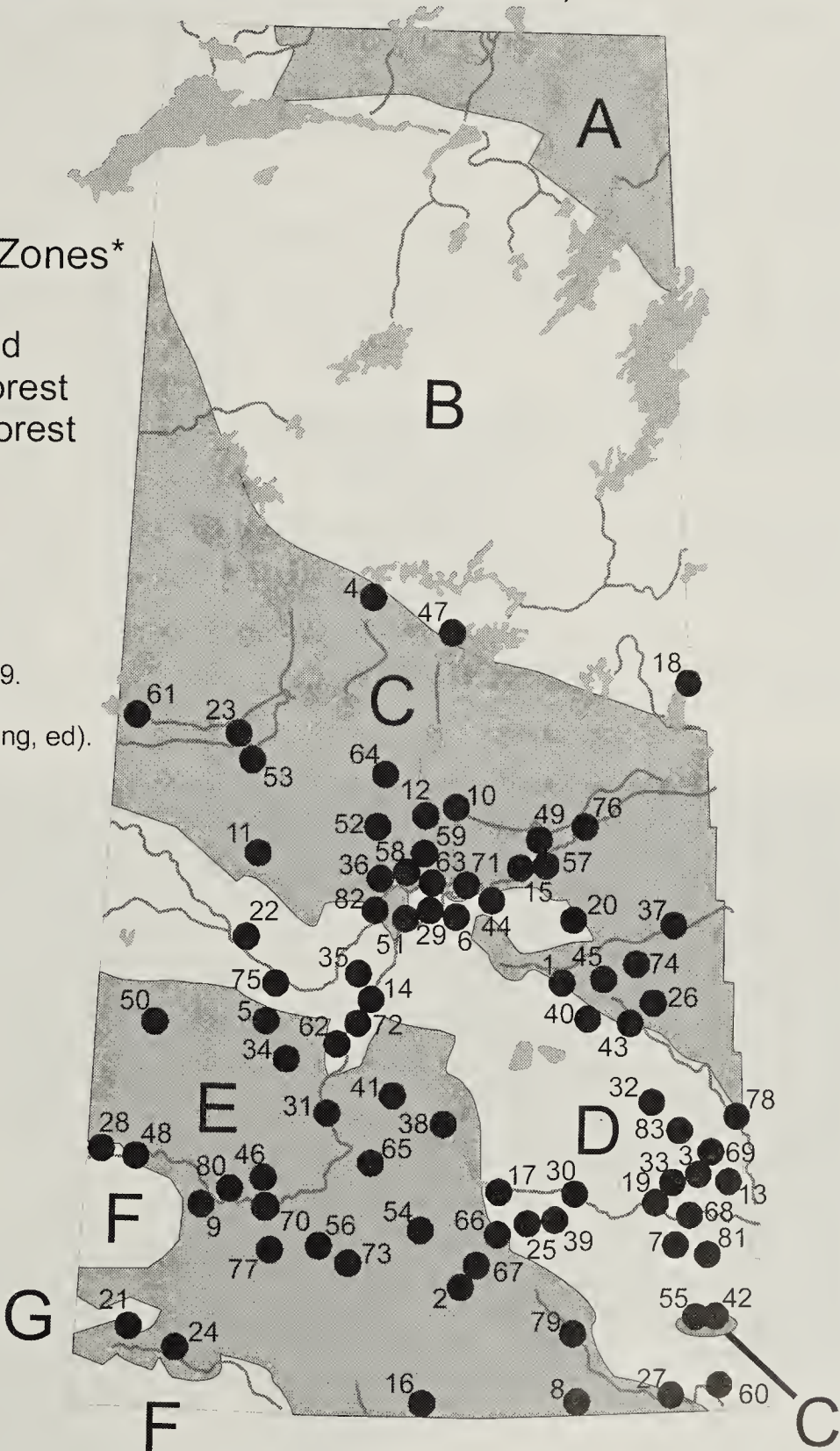
Harvey Schmidt

Figure 1. Location of 2009 counts (numbers correspond to those in text under **Count areas and participants**).

Natural Vegetation Zones*

- A. Subarctic Woodland
- B. Northern Boreal Forest
- C. Southern Boreal Forest
- D. Aspen Parkland
- E. Mixed Prairie
- F. Dry Mixed Prairie
- G. Cypress Hills

*adapted from: Thorpe, J. 1999.
Natural Vegetation. P. 133 in
Atlas of Saskatchewan (K. Fung, ed).
Univ. of Sask., Saskatoon.



Nature teaches more than she preaches. There are no sermons in stones. It is easier to get a spark out of a stone than a moral.
- John Burroughs

Table 6. New (in bold and italics) and tying high counts for individual species 2009. Count period results are in brackets.

LOCATION	2009 SPECIES COUNT	PREVIOUS LOCATION, YEAR HIGH
Estevan	3 Hooded Merganser	3 Estevan, 1960
Edenwold, Saskatoon (Count.Period)	1 American Kestrel	1 N to Saskatoon
Swift Current	116 Eurasian Collared- Dove	108 Swift Current, 2008
Cypress Hills P.P., Swift Current	6 Mourning Dove	3 Swift Current, 2008; Round Lake, 1975
Saskatoon	36 Northern Flicker	27 Saskatoon 1999
Saskatoon	263 Red-breasted Nuthatch	251 Saskatoon 2007
Hudson Bay	6 Chipping Sparrow	3 Watson, 1999
Creighton	1 Rustic Bunting	NEW
Yorkton	6 Rose-breasted Grosbeak	3 La Ronge South, 2004; Raymore 1966
Saskatoon	292 Pine Siskin	214 Prince Albert 1995



Red Fox.

Christian Artuso

Table 7. Population changes in numbers of selected species in 2009* compared to 2008 and the average for 5 years (2004-2008), based on the number of birds per party hour. A minus sign indicates a decrease from previous years.

Species	% change from 2008	% change from 2004-2008		% change from 2008	% change from 2004-2008
Canada Goose	-34	-45	Black-billed Magpie	26	-2
Mallard	95	-45	Common Raven	-7	10
Common Goldeneye	-12	-2	Horned Lark	200	128
Gray Partridge	-30	-24	Black-capped Chickadee	5	10
Ring-necked Pheasant	39	54	Boreal Chickadee	-4	-6
Ruffed Grouse	-21	-15	Red-breasted Nuthatch	75	157
Sharp-tailed Grouse	3	0	White-breasted Nuthatch	2	29
Bald Eagle	43	5	Brown Creeper	3	-60
Northern Goshawk	-3	-8	Golden-crowned Kinglet	6	-74
Golden Eagle	49	2	American Robin	503	1421
Merlin	16	-9	European Starling	-60	-23
Prairie Falcon	-26	-14	Bohemian Waxwing	-90	-90
Rock Pigeon	-21	-9	Dark-eyed Junco	-20	3
Great Horned Owl	-15	-18	Snow Bunting	-16	28
Snowy Owl	1	-3	Pine Grosbeak	-37	-39
Short-eared Owl	24	-3	House Finch	-29	-47
Downy Woodpecker	-6	3	White-winged Crossbill	653	369
Hairy Woodpecker	7	15	Common Redpoll	-34	-45
Northern Flicker	101	102	Hoary Redpoll	-28	-9
Pileated Woodpecker	64	36	Pine Siskin	2798	1028
Northern Shrike	-48	-36	Evening Grosbeak	7	-6
Gray Jay	3	2	House Sparrow	-4	-7
Blue Jay	-32	-27			

*As tremendous changes can occur in small sample sizes only those species recorded on an annual average of six or more counts are included.



Nature is an infinite sphere of which the center is everywhere and the circumference nowhere.
- Blaise Pascal

RECENT BALD EAGLE BREEDING RANGE EXPANSION IN MANITOBA

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Since discovering a Bald Eagle nest near Oak Hammock Marsh Wildlife Management Area, southern Manitoba, in the late 1990s, I have kept an informal log of "out-of-range" Bald Eagle nests that I found or heard of in subsequent years. It soon became clear that increasing numbers of Bald Eagles were starting to nest outside of their traditional boreal forest range, in agricultural areas where they had not been known to breed as recently as just a few decades ago. In this paper, I attempt to delineate the current (as of 2009) Bald Eagle breeding range in Manitoba south and west of the continuously forested regions of the province (i.e. in "agricultural" Manitoba), with a brief note about breeding range expansion to the north.

Data Collection

To get a more complete picture of bald eagle nest distribution, in spring 2009 a query was posted on the Yahoo group manitobabirds, which resulted in numerous responses; in addition, many observers were contacted personally. Discussions and e-mails between myself and C. Cuthbert (Ducks Unlimited Canada), K. De Smet (Manitoba Conservation), W. Koonz (formerly of Manitoba Natural Resources), and P. Taylor (Nature Manitoba) were particularly productive in producing records and providing leads. After eliminating duplicate records, a list of over 50 nest sites within the non-forested parts of southern Manitoba was produced. In addition, results from aerial Bald Eagle surveys conducted in the 1980s by Manitoba Natural Resources personnel were studied to establish

the nesting range during that time. The numerous (hundreds) nests mapped during these surveys were almost all located outside of the area of southern Manitoba discussed in this paper, but they give a good indication of the extent of the breeding range about 25 years ago.

History

The status of the Bald Eagle as a breeding bird in Manitoba was apparently not well known in the 19th century. Ernest Thompson Seton's correspondents variously described it as "very rare summer visitant, probably breeding..... several nests noted [along the Red River]; summer resident, tolerably common; rare; common between latitude 62° and Lake Superior" [brackets and punctuation mine].⁸ What is clear is that the species nested away from the boreal forest, along the Red River - and probably elsewhere along treed river courses - in the mid- and late 1800s. There is very little information about breeding status in the first half of the 20th century, but by mid-century, the species was absent as a breeder in southern Manitoba. Other than one or two anecdotal reports of nests in the late 1980s, none of the over 40 long-term birders I have contacted recall nests in agricultural areas of Manitoba before the 1990s. The aerial surveys mentioned above took place from 1982 to 1987 and were particularly focused on the Lake Winnipegosis area. These surveys also showed that the breeding range did not include any of the areas identified as agricultural Manitoba during the mid-1980s (Fig. 1).

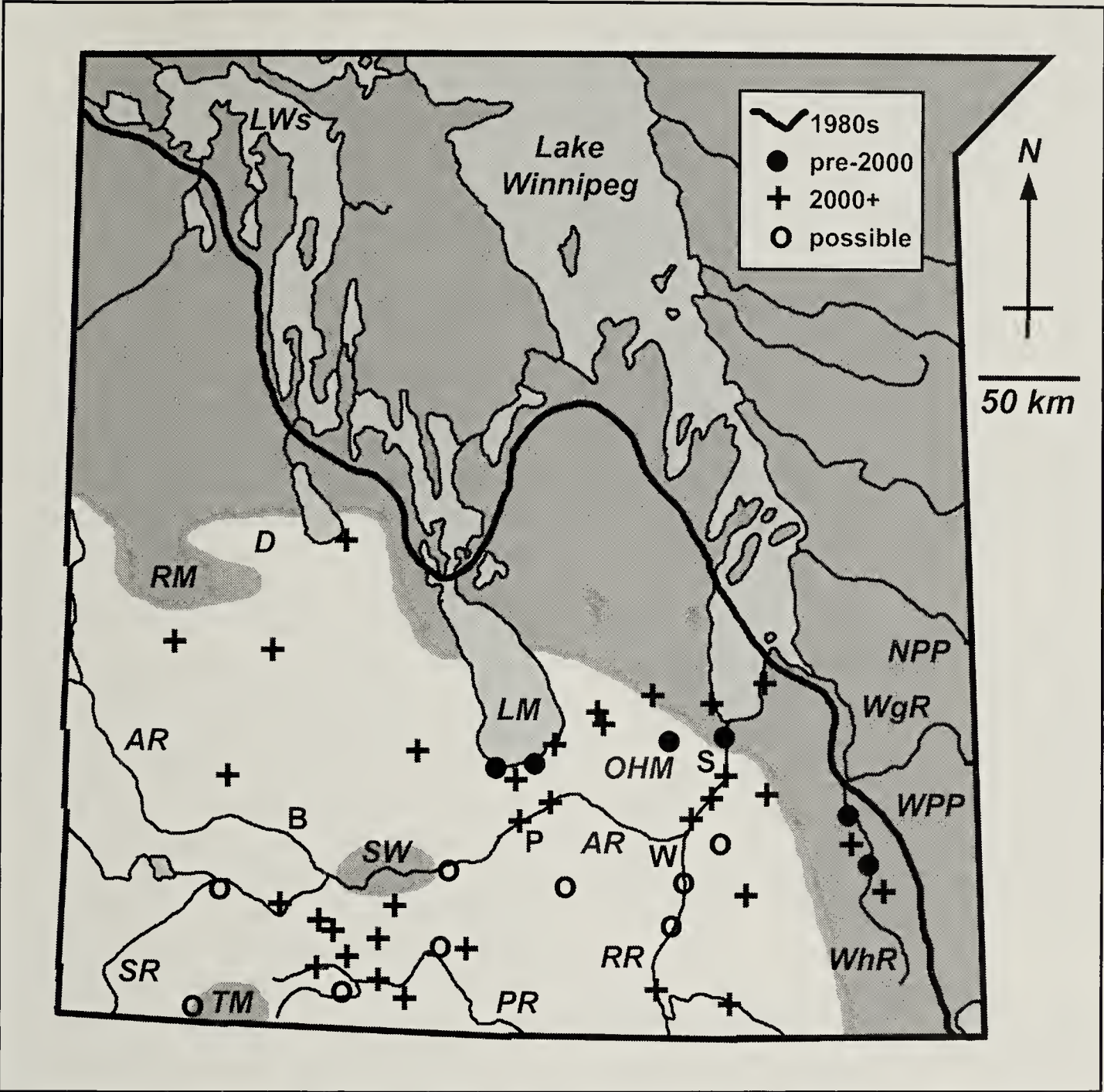


Figure 1. Locations of Bald Eagle nests in agricultural southern Manitoba. AR – Assiniboine River, B – Brandon, D – Dauphin, LM – Lake Manitoba, LWs – Lake Winnipegosis, NPP – Nopiming Provincial Park, OHM – Oak Hammock Marsh, P – Portage la Prairie, PR – Pembina River, RM – Riding Mountain, RR – Red River, S – Selkirk, SR – Souris River, SW – Spruce Woods, TM – Turtle Mountains, W – Winnipeg, WgR – Winnipeg River, WhR – Whitemouth River, WPP – Whiteshell Provincial Park

It appears that the overall decline of Bald Eagle numbers across North America during the early and mid-20th century also caused a contraction of the Manitoba breeding range, so that nesting was essentially restricted to the boreal forest and along the shores of Manitoba’s “Great Lakes” at that time. Even the map in the Bald Eagle account in *The Birds of Manitoba*, published as recently as 2003,

shows the breeding range restricted to the areas noted above, although mention is made in the text that “the species is currently extending its breeding range into agricultural regions across southern Manitoba.”⁷

Nests and Nest Trees

While Bald Eagles may nest on “rocky cliffs or on pinnacles of rock” in areas



Bald Eagle. Original artwork by Rudolf Koes.

where no trees exist and in a variety of tree species elsewhere, they typically use large conifers when nesting in Canada's boreal forest.^{1,3} Koonz stated that "nest trees in the south are often deciduous with conifers more often chosen northward". He also noted that over 90% of the nests in deciduous trees were in *Populus* (spp.) trees.⁶

During the compilation of nest records for this study, correspondents were asked to indicate the species of nest tree, if known. For 20 of the 50+ nests, 13 were in aspen and seven in cottonwoods. Nests along riverbanks and the shores of large lakes were in cottonwoods, while nests away from water were always in aspen bluffs. Both live and dead trees were used. Live trees dominated, and were likely chosen because they remain standing longer than dead trees and their foliage may provide shade for the nest and young. However, aspen are relatively short-lived trees, and many nests made in them did not last more than a few years before the nest collapsed or the tree fell down. In most cases, new nests were built in the immediate vicinity of the old nests. For example, at Oak Hammock Marsh, the eagles currently (in 2009) occupy a nest about 100 m west of the location

of their first nest. Nests in cottonwoods seem to last longer, and these account for most of the earliest nests noted in this paper, such as those along the Red River and the Whitemouth River. No attempt has been made to record nest heights or productivity.

Range Expansion

It appears that as Bald Eagle numbers have recovered in Manitoba, their range has expanded into what are likely sub-optimal habitats compared to boreal forest sites. Some birds have learned to nest in fairly close proximity to human activity, such as boating or farming, or in cottage areas.^{3,6} It is not unusual to see nests located close to farms; indeed, several of the nests located along Lake Winnipegosis during the 1980s aerial surveys were near farms (W. Koonz, pers. comm.). It is also likely that changes in agricultural practices aided in this range expansion, by increasing the food supply. Large poultry and hog farms flourished in the 1980s and 1990s, and offal produced by these operations was sometimes scavenged by Bald Eagles. Increased White-tailed Deer numbers in combination with increased vehicle traffic resulted in more roadkill, which may also have provided additional scavenging opportunities for eagles. In addition, maturation of trees across the Prairies likely provided an increased choice of nest trees.

From the numerous responses to my request for sightings and years of nest locations in "agricultural" southern Manitoba, the earliest appears to be a nest found by P. Taylor on 1 May 1993, not far from the mouth of the Red River. Other nests known to have been used in the 1990s were at a few locations along the lower Whitemouth River, near Old Pinawa, at Delta Marsh, and possibly just south of Riding Mountain National Park, plus the aforementioned Oak Hammock Marsh

nest. All other nests were established in the 21st century (Fig. 1).

Figure 1 shows that the few nests found in the 1990s were all located near the edge of continuous forest, with the exception of those at Delta Marsh and Oak Hammock Marsh. The latter nests were occupied at the end of the 1990s, but probably not earlier. In the first few years of the 21st century, some nests were constructed deeper into the agricultural south; these include nests in the Killarney area, at La Broquerie, St. Jean-Baptiste, and Winnipeg. At the same time, more pairs started breeding along the Whitemouth River.

Figure 1 also shows that most nests are located along major rivers or near large lakes: The Winnipeg River/Whitemouth River system, the Red River, the south shore of Lake Manitoba, and the chain of lakes in the Pembina River Valley. Currently there appear to be only two large areas in the agricultural south of the province that are not occupied: a roughly pie-shaped region bounded by the Assiniboine, Red, and Pembina Rivers, plus the extreme southwest of the province. The first region consists primarily of vast agricultural expanses, with virtually no water bodies of any size and few woodlands, and is unlikely to support eagles. The latter area boasts some sizeable lakes, such as Oak Lake and Whitewater Lake, plus larger streams such as the tree-lined Assiniboine and Souris Rivers, which may well attract Bald Eagles in the near future. The above water bodies contain fish populations large enough to support a number of breeding Bald Eagle pairs.

In northern Manitoba, a concurrent range expansion has taken place. Although much of the northern third of the province is rather inaccessible, and hence little birded, the avifauna of the Churchill

region has been extensively studied for many decades. During the 1960s, the Bald Eagle was considered a casual species in the area, with no evidence of nesting, although it may have done so in historic times.⁵ Sightings increased after the 1970s, and currently the species is noted regularly, especially along the Churchill River and at La Pérouse Bay. The highest daily count was 10 seen during a flight between La Pérouse Bay and Churchill Northern Studies Centre on 24 June 1998.⁴ In 2005, a pair of eagles usurped an Osprey nest along Goose Creek, about 15 km south of Churchill. Eagles have also nested about 20 to 30 km farther upstream on the Churchill River, at the mouths of the Monk and Deer Rivers and Heppell Creek (B. Chartier, pers. comm.). In the Hudson Bay Lowlands of Ontario, Bald Eagle sightings have also increased considerably since the 1980s, although nesting had not been confirmed as of 2005.² The limiting factor to expansion in the north appears to be the lack of suitable nest trees beyond the tree line.

Acknowledgements

Many thanks are due to all the correspondents who provided information about nests: Dean Berezanski, Luc Blanchette, Carrie and Helen Braden, Bonnie Chartier, Rhonda and Robin Chestnut, Cal Cuthbert, David Dawson, Grant Delaney, Ken De Smet, Scott Drieschman, Ron Dueck, Jim Duncan, Adolf Ens, Dennis Fast, Cliff Findlay, Lyle Franck, George and Phyllis Gillespie, Gord Grief, Arno and Wally Jansen, Adam and Ken Kingdon, Bill Koonz, Gerald Machnee, Tracy Machonachie, Gord Ogilvie, Bob Porth, Brian Ransom, Brian Ratcliff, Susan and Terry Rebizant, Heinz Reimer, Will Rex, Eldon and Janet Schmidt, Jo Swartz, Dennis Swayze, Peter Taylor, John Thackuk, Bill Walley, Ron Wiebe, Tanis Young. Nicole Firlotte of Manitoba Conservation kindly allowed me

access to aerial Bald Eagle nest survey maps. Peter Taylor produced the map; he also made many helpful comments on the manuscript. I am very grateful for his help.

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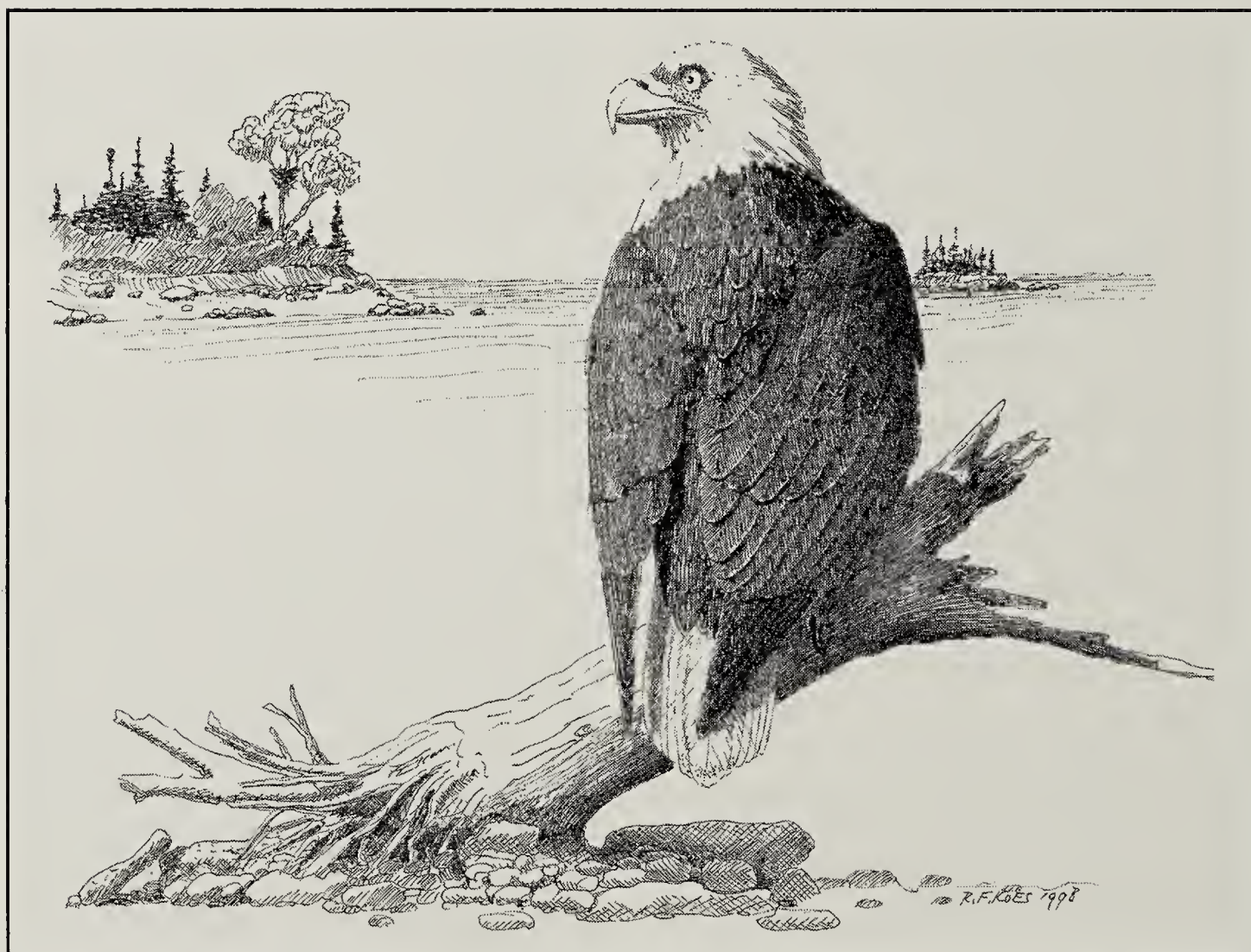
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Bald Eagle.

Rudolf Koes

MAMMALS

37th ANNUAL SASKATCHEWAN CHRISTMAS MAMMAL COUNT - 2009

ALAN R. SMITH, Box 154, Avonlea, SK S0H 0C0.

With the exception of Holbein, all Christmas Bird Counts also included a mammal count. The 82 counts conducted were the fewest since 1996, when 82 counts were also conducted. While the number of mammals seen or heard (2968) was the fewest this century, the number of species recorded (37) was about normal for the last ten years. Indian Head led, with 11 species seen or heard; Qu'Appelle Dam was the runner-up with 10 species.

No new species were added to the all-time species total. Noteworthy records were also scarce. A Fisher is a rare sighting anywhere in the province, but one was observed well beyond its normal Boreal Forest range at Moose Mountain on 5 January; another was seen in its normal range at Endeavour on 20 December.

A new high count for Eastern Cottontail was established at Estevan with five seen; the previous high was two, also at Estevan, in 1990, 1992, and 2000.

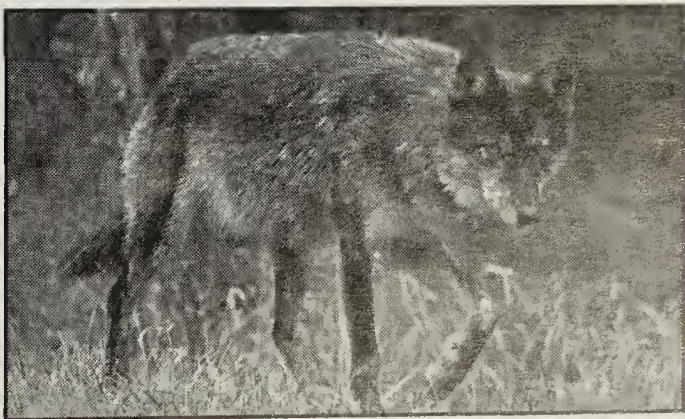
For information on participants, weather, coverage and location of Christmas Mammal Counts see the CBC summary in this issue.

Explanation of Entries in Table 1

The number of mammals actually seen or heard on the count day is treated separately from those recorded by other means, or those recorded during the count period (14 December to 5 January)

but not on the count day. Numbers of individuals seen or heard are given in Table 1 and are tallied in the first line of totals at the bottom of the table. The number of species they represent is given in the second line.

For species detected only by tracks or by other means, or that were seen or heard only in the count period but not on the count day, no numbers of individuals are given in Table 1. Species detected only by tracks are indicated by 't' in the table; those detected only by other means are indicated as follows: dead animals 'm', more clearly identifiable chewing or digging 'd', dens or lodges 'L', and by smell 's.' Species detected by any means during the count period, but not on the count day, are indicated by 'c' in the table. These additional species are tallied in lines 3, 4, and 5 at the bottom of the table. If a mammal is reported as a member of a species group (e.g., mouse species, deer species), it is counted as a species only if no other species in this group has been definitely recorded. The columns at the end of the table give totals for each species.



Timber Wolf.

Nick Saunders

Table 1-1. 37th Saskatchewan Christmas Mammal Count-2009.

Map number	1	2	3	4	5	6	7	8	9	10	11	12	13
	Archerwill, 4 Jan 2010	Avonlea, 21 Dec 2009	Bangor, 29 Dec 2009	Besnard Lake, 27 Dec 2009	Biggar, 27 Dec 2009	Birch Hills, 17 Dec 2009	Broadview, 26 Dec 2009	Bromhead, 31 Dec 2009	Cabri, 1 Jan 2010	Candle Lake, 30 Dec 2009	Cater, 1 Jan 2010	Christopher Lake, 17 Dec 2009	Churchbridge, 30 Dec 2009
Short-tailed Shrew													
Shrew Species						t							
Eastern Cottontail													
Nuttall's Cottontail													
Snowshoe Hare	c			t	t	t	t			t	t	t	
White-tailed Jack Rabbit					t		t	1					
Richardson's Ground Squirrel													
Eastern Grey Squirrel													
Eastern Fox Squirrel													
American Red Squirrel	1		1	1		5	2			9	3	3	2
Northern Flying-Squirrel	c											1	
American Beaver						L	L			L			L
Deer Mouse							t						
Muskrat						L							L
Gapper's Red-backed Vole													
Meadow Vole				t						t			
Vole Species					t	t				t			
House Mouse						t							
Mouse Species	t												
American Porcupine		m			1		t						
Coyote	t		3		12	6	t	1	1	t	t		2
Wolf				t						t	c		
Red Fox	c		2			t	t	t		t	t		
Raccoon	t												
American Marten													
Fisher										t			
Ermine						t	t			t			
Long-tailed Weasel			1			t	t			t			
Least Weasel						t				t			
Weasel Species					t								
American Mink	c					t				t			
American Badger					1								
Striped Skunk	s												
River Otter				4						t			
Lynx										t			
Mule Deer					55			3	9		6		
White-tailed Deer	7	10	21		27	t	t	14		14	2	4	
Deer Species									t				t
Moose	3						t		2	t			t
Elk	c									t			
Pronghorn		60											
Totals seen/heard on count day	11	70	28	5	96	11	2	19	12	23	11	8	4
Total species seen/heard	3	2	5	2	5	2	1	4	3	2	3	3	2
Total species recorded by tracks	3	0	0	3	4	10	10	1	1	14	3	1	2
Total species otherwise recorded	1	1	0	0	0	2	1	0	0	1	0	0	2
Species recorded count period	5	0	0	0	0	0	0	0	0	0	1	0	0
Total species count period and day	12	3	5	5	9	14	12	5	3	17	7	4	6

Table 1-2. 37th Saskatchewan Christmas Mammal Count-2009.

Map number	14	15	16	17	18	19	20	21	22	23	24	25	26
	Clark's Crossing, 19 Dec 2009	Codette Lake, 1 Jan 2010	Coronach, 16 Dec 2009	Craven, 19 Dec 2009	Creighton, 14 Dec 2009	Crooked Lake, 14 Dec 2009	Crooked River, 30 Dec 2009	Cypress Hills P.P., 30 Dec 2009	Denholm, 25 Dec 2009	Dorintosh, 5 Jan 2009	Eastend, 3 Jan 2010	Edenwold, 27 Dec 2009	Endeavour, 20 Dec 2009
Short-tailed Shrew													
Shrew Species					t								
Eastern Cottontail													
Nuttall's Cottontail			1					1			2		
Snowshoe Hare	1	t		t	1				t	t			t
White-tailed Jack Rabbit	1			t					t		11		
Richardson's Ground Squirrel													
Eastern Grey Squirrel													
Eastern Fox Squirrel				1									
American Red Squirrel	2	7			2	2	1	6	1	t			t
Northern Flying-Squirrel													
American Beaver		L				L							
Deer Mouse													
Muskrat			1										
Gapper's Red-backed Vole									c				
Meadow Vole													
Vole Species		t			t	t			t				t
House Mouse													
Mouse Species	t			t									
American Porcupine		t						1			3		
Coyote	11	2	7	6	t	t	c	2	3	t	4	1	t
Wolf					t					t			
Red Fox	1	1		L	t	t			t		1		
Raccoon	t												
American Marten		t											
Fisher										t			
Ermine		t											1
Long-tailed Weasel		t			t								
Least Weasel			t					t		t			
Weasel Species													
American Mink						c					t		
American Badger			1										
Striped Skunk													
River Otter		t			t					c			
Lynx													
Mule Deer	15	2	27	8				3			270		9
White-tailed Deer	21	2	11	8		4	3	29	3	20	100		1
Deer Species				t									
Moose							c	t	2		c	3	t
Elk		t					5			t			t
Pronghorn								18			39		
Totals seen/heard on count day	52	14	48	23	3	6	9	60	9	20	430	4	11
Total species seen/heard	7	5	6	4	2	2	3	7	4	1	8	2	3
Total species recorded by tracks	2	8	1	4	7	3	0	2	4	7	1	0	6
Total species otherwise recorded	0	1	0	1	0	1	0	0	0	0	0	0	0
Species recorded count period	0	0	0	0	0	1	2	0	1	1	1	0	0
Total species count period and day	9	14	7	8	9	7	5	9	8	9	10	2	9

Table 1-3. 37th Saskatchewan Christmas Mammal Count-2009.

Map number	27	28	29	30	31	32	33	34	25	37	38	39	40
	Estevan, 4 Jan 2010	Estuary North, 2 Jan 2010	Fenton, 18 Dec 2009	Fort Qu'Appelle, 19 Dec 2009	Gardiner Dam, 18 Dec 2009	Good Spirit Lake, 17 Dec 2009	Grayson, 24 Dec 1009	Harris, 16 Dec 2009	Hepburn, 28 Dec 2009	Hudson Bay, 27 Dec 2009	Imperial, 20 Dec 2009	Indian Head, 27 Dec 2009	Kelvington, 30 Dec 2009
Short-tailed Shrew				c									
Shrew Species													t
Eastern Cottontail	5												
Nuttall's Cottontail		t			4	t							
Snowshoe Hare		t	t	c	1	t		1				4	t
White-tailed Jack Rabbit					1			t			t	1	
Richardson's Ground Squirrel													
Eastern Grey Squirrel												1	
Eastern Fox Squirrel	1											4	
American Red Squirrel			7	2		2						10	
Northern Flying-Squirrel										1			
American Beaver			L			L							
Deer Mouse			t										
Muskrat	1		L	1		L							
Gapper's Red-backed Vole			1	m									
Meadow Vole										1			
Vole Species					t			t					
House Mouse				3									
Mouse Species			t			t							
American Porcupine	2							1					t
Coyote	2		4	1	6	3		7		2	3	16	t
Wolf													
Red Fox				c	t	t	1					5	t
Raccoon													
American Marten													
Fisher													
Ermine			t										
Long-tailed Weasel												1	t
Least Weasel			t									1	
Weasel Species						t							
American Mink				2									
American Badger	L							d					
Striped Skunk					s								s
River Otter													
Lynx													
Mule Deer	14	45			15			77			12	6	t
White-tailed Deer		37	2	3	39	9		17		3	16	20	t
Deer Species													
Moose						4		t			2		
Elk						t				40			
Pronghorn								23					
Totals seen/heard on count day	25	82	14	12	66	18	1	126	0	47	33	69	0
Total species seen/heard	6	2	4	6	6	4	1	6	0	5	4	11	0
Total species recorded by tracks	0	2	5	0	2	6	0	3	0	0	1	0	8
Total species otherwise recorded	1	0	2	1	1	2	0	1	0	0	0	0	1
Species recorded count period	0	0	0	3	0	0	0	0	0	0	0	0	0
Total species count period and day	7	4	11	10	9	12	1	10	0	5	5	11	9

Table 1-4. 37th Saskatchewan Christmas Mammal Count-2009.

Map number	41	42	43	44	45	46	47	48	49	50	51	52	53
	Kenaston, 21 Dec 2009	Kenosee Lake, 30 Dec 2009	Ketchen North, 26 Dec 2009	Kinistino, 4 Jan 2010	Kinloch, 18 Dec 2009	Kyle, 28 Dec 2009	La Ronge, 29 Dec 2009	Leader North, 27 Dec 2009	Love-Torch River, 28 Dec 2009	Luseland, 27 Dec 2009	MacDowall, 3 Jan 2010	Mayview, 2 Jan 2010	Meadow Lake, 26 Dec 2009
Short-tailed Shrew													
Shrew Species													
Eastern Cottontail													
Nuttall's Cottontail	t					1		2					
Snowshoe Hare				2	t		t		t		t		t
White-tailed Jack Rabbit	t					4		2		c			
Richardson's Ground Squirrel													
Eastern Grey Squirrel													
Eastern Fox Squirrel													
American Red Squirrel				2	5		1		5		9	2	1
Northern Flying-Squirrel													
American Beaver		L	L		L						L		
Deer Mouse													
Muskrat					L						L		
Gapper's Red-backed Vole													
Meadow Vole													
Vole Species													
House Mouse													
Mouse Species					t	t					t		t
American Porcupine	1												2
Coyote	2		t		3	4		4	8	4	1		2
Wolf					t								
Red Fox	t		t		t	c			1		t		t
Raccoon	t												
American Marten													
Fisher					t								
Ermine													
Long-tailed Weasel	t												
Least Weasel											t		
Weasel Species			t		t								t
American Mink					t		c						
American Badger						t		1			d		
Striped Skunk	t												
River Otter							3						
Lynx													
Mule Deer	9					21		9	14	2			
White-tailed Deer	8	7	t		19	11		14		c	t		t
Deer Species													
Moose	c	3	t		4	c			c	5	c		
Elk			t		c				c				
Pronghorn						11		3					
Totals seen/heard on count day	20	10	0	4	31	52	4	35	28	11	10	2	5
Total species seen/heard	4	2	0	2	4	6	2	7	4	3	2	1	3
Total species recorded by tracks	6	0	6	0	7	2	1	0	1	0	5	0	5
Total species otherwise recorded	0	1	1	0	2	0	0	0	0	0	3	0	0
Species recorded count period	1	0	0	0	1	2	1	0	2	2	1	0	0
Total species count period and day	11	3	7	2	14	10	4	7	7	5	11	1	8

Table 1-5. 37th Saskatchewan Christmas Mammal Count-2009.

Map number	54	55	56	57	58	59	60	61	62	63	64	65	66
	Moose Jaw, 18 Dec 2009	Moose Mountain, 5 Jan 2010	Morse, 19 Dec 2009	Nipawin, 2 Jan 2010	Nisbet Forest NW, 27 Dec 2009	Nisbet Forest West, 29 Dec 2009	Oxbow, 21 Dec 2009	Pierce Lake, 2 Jan 2010	Pike Lake, 2 Jan 2010	Prince Albert, 20 Dec 2009	Prince Albert N.P., 17 Dec 2009	Qu'Appelle Dam, 20 Dec 2009	Regina, 26 Dec 2009
Short-tailed Shrew										t			
Shrew Species				1									
Eastern Cottontail													
Nuttall's Cottontail			t									3	
Snowshoe Hare				8		1		t	t	t	t		
White-tailed Jack Rabbit			4	t					t	1		1	9
Richardson's Ground Squirrel					c								
Eastern Grey Squirrel													4
Eastern Fox Squirrel	4						3						15
American Red Squirrel		3		1		5		2	17	17	36	1	
Northern Flying-Squirrel				1									
American Beaver										L			
Deer Mouse				t						t			
Muskrat					L					L		1	
Gapper's Red-backed Vole													
Meadow Vole													t
Vole Species					t					t	t		
House Mouse													
Mouse Species					t				2	t			
American Porcupine				t	t								
Coyote		1	8	2	c	1	1	1	6	2	t	10	2
Wolf										t	5		
Red Fox	1	2	4		t					t	2	2	t
Raccoon										t			
American Marten											1		
Fisher		1									t		
Ermine													
Long-tailed Weasel			t	t		c			t			3	
Least Weasel				t									
Weasel Species						1					t		
American Mink													
American Badger			d										
Striped Skunk										t			
River Otter											1		
Lynx													
Mule Deer			45	7			8		13			41	
White-tailed Deer	1	2	203	6	2	c	4	13	16	t	7	11	t
Deer Species									t		t		
Moose		2	3				2		t			1	
Elk											t		
Pronghorn			30										
Totals seen/heard on count day	6	11	297	26	2	8	18	16	54	20	52	74	30
Total species seen/heard	3	6	7	7	1	4	5	3	5	3	6	10	4
Total species recorded by tracks	0	0	2	6	3	0	0	1	5	9	7	0	3
Total species otherwise recorded	0	0	1	0	1	0	0	0	0	2	0	0	0
Species recorded count period	0	0	0	0	2	2	0	0	0	0	0	0	0
Total species count period and day	3	6	10	13	7	5	5	4	9	14	12	10	7

Table 1-6. 37th Saskatchewan Christmas Mammal Count-2009.

Map number	67	68	69	70	71	72	73	74	75	76	77	78	79
	Rouleau, 27 Dec 2009	Round Lake, 16 Dec 2009	Saltcoats, 4 Jan 2010	Sk. Landing P.P., 30 Dec 2009	Sk. River Forks, 14 Dec 2009	Saskatoon, 26 Dec 2009	Shamrock, 27 Dec 2009	Somme, 20 Dec 2009	Spinney Hill, 29 Dec 2009	Squaw Rapids, 1 Jan 2010	Swift Current, 19 Dec 2009	Togo, 3 Jan 2010	Weyburn, 19 Dec 2009
Short-tailed Shrew													
Shrew Species					t								
Eastern Cottontail													
Nuttall's Cottontail				t							3		
Snowshoe Hare			1		t	1		3				1	
White-tailed Jack Rabbit			2	2		t	8	5			1		
Richardson's Ground Squirrel											2		
Eastern Grey Squirrel											18		
Eastern Fox Squirrel													8
American Red Squirrel		1	4		4	2		4	4	2		4	
Northern Flying-Squirrel													
American Beaver		L											
Deer Mouse					t	t							
Muskrat													
Gapper's Red-backed Vole					1								
Meadow Vole													
Vole Species													
House Mouse													
Mouse Species				t	t	t				t	t		
American Porcupine			1	1		2							
Coyote	t	1		3	2	14	15	4		t	1	2	3
Wolf					t			1		t			
Red Fox	1	1			t		9	c		1	t		1
Raccoon													
American Marten													
Fisher					1								
Ermine					t			1					
Long-tailed Weasel								1					
Least Weasel													
Weasel Species				t		1					t		
American Mink					t						t		
American Badger						d	d				d		
Striped Skunk													
River Otter													
Lynx													
Mule Deer		3				10	116	c			15		4
White-tailed Deer		5	4	6	t	80	72	29	3	2	51	7	15
Deer Species	t					t	t				m		
Moose	c												
Elk		2			t								
Pronghorn				41									
Totals seen/heard on count day	1	13	12	53	8	110	220	48	7	5	91	14	31
Total species seen/heard	1	6	5	5	4	7	5	8	2	3	7	4	5
Total species recorded by tracks	2	0	0	3	10	4	1	0	0	3	4	0	0
Total species otherwise recorded	0	1	0	0	0	1	1	0	0	0	2	0	0
Species recorded count period	1	0	0	0	0	0	0	2	0	0	0	0	0
Total species count period and day	4	7	5	8	13	11	6	10	2	6	12	4	5

Table 1-7. 37th Saskatchewan Christmas Mammal Count-2009.

Map number	80	81	82	83								
	White Bear, 5 Jan 2010	Whitewood, 28 Dec 2009	Wingard-Fort Carlton, 3 Jan 2009	Yorkton, 22 Dec 2009	# individuals seen/heard count day	# Counts seen/heard	# Counts recorded as tracks	# Counts recorded as other	# Counts, count period	# Counts, count period & count day	% counts	high count
Short-tailed Shrew					0	0	1	0	1	2	0.0	0
Shrew Species					1	1	4	0	0	5	1.2	1
Eastern Cottontail					5	1	0	0	0	1	1.2	5
Nuttall's Cottontail					17	8	5	0	0	13	9.9	4
Snowshoe Hare	1				26	13	26	0	2	41	16.0	8
White-tailed Jack Rabbit	1			t	55	17	11	0	1	29	21.0	11
Richardson's Ground Squirrel					2	1	0	0	1	2	1.2	2
Eastern Grey Squirrel					23	3	0	0	0	3	3.7	18
Eastern Fox Squirrel	4				40	8	0	0	0	8	9.9	15
American Red Squirrel	4	2	2		209	46	2	0	0	48	56.8	36
Northern Flying-Squirrel					3	3	0	0	1	4	3.7	1
American Beaver	L				0	0	0	15	0	15	0.0	0
Deer Mouse					0	0	6	0	0	6	0.0	0
Muskrat			L		4	4	0	9	0	13	4.9	1
Gapper's Red-backed Vole					2	2	0	1	1	4	2.5	1
Meadow Vole					1	1	3	0	0	4	1.2	1
Vole Species					0	0	13	0	0	13	0.0	0
House Mouse					3	1	1	0	0	2	1.2	3
Mouse Species					2	1	16	0	0	17	1.2	2
American Porcupine		t	t		15	10	7	1	0	18	12.3	3
Coyote	6	2	2		222	53	13	0	2	68	65.4	16
Wolf			t		6	2	9	0	1	12	2.5	5
Red Fox		2	2	t	40	19	22	1	4	46	23.5	9
Raccoon					0	0	4	0	0	4	0.0	0
American Marten					1	1	1	0	0	2	1.2	1
Fisher					2	2	4	0	0	6	2.5	1
Ermine					2	2	6	0	0	8	2.5	1
Long-tailed Weasel					6	4	10	0	1	15	4.9	3
Least Weasel			t		1	1	9	0	0	10	1.2	1
Weasel Species					2	2	8	0	0	10	2.5	1
American Mink					2	1	6	0	3	10	1.2	2
American Badger		d			3	3	1	8	0	12	3.7	1
Striped Skunk					0	0	2	3	0	5	0.0	0
River Otter					8	3	3	0	1	7	3.7	4
Lynx					0	0	1	0	0	1	0.0	0
Mule Deer					893	32	1	0	1	34	39.5	270
White-tailed Deer		16	2	t	1063	56	10	0	2	68	69.1	203
Deer Species					0	0	8	1	0	9	0.0	0
Moose		1			37	14	8	0	7	29	17.3	5
Elk		t	t		47	3	10	0	3	16	3.7	40
Pronghorn					225	8	0	0	0	8	9.9	60
Totals seen/heard on count day	6	31	8	2	2968							
Total species seen/heard	1	8	4	1		30						
Total species recorded by tracks	0	2	4	3			27					
Total species otherwise recorded	0	2	1	0				8				
Species recorded count period	0	0	0	0					16			
Total species count period and day	1	12	9	4						36		

FIRST CATERPILLAR OBSERVATIONS OF THE MORMON METALMARK BUTTERFLY IN GRASSLANDS NATIONAL PARK, SASKATCHEWAN

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The Mormon Metalmark butterfly is the only species of the primarily tropical lepidopteran family Riodinidae found in Canada. The species is commonly found in arid regions of western North America. Its range is relatively contiguous through California, Nevada, Utah, and Colorado. Farther north, the populations become more disjunct.¹ There are only two known Canadian populations, one in the southern Similkameen River Valley of British Columbia, and one in the prairie badlands of southern Saskatchewan, primarily in Grasslands National Park.^{2,3} These populations are listed respectively as Endangered and Threatened under the Federal Species At Risk Act.¹ During field work from May to August 2009, we documented the first Canadian observations of Mormon Metalmark caterpillars.

During June and July, Mormon Metalmark caterpillars were observed in Laouenan, Timmons, and 70 Mile Butte, in the West Block of Grasslands National Park, where metalmark butterflies had been located in previous field seasons. The first two sites are on gentle-sloping coulee bottoms, and the third is on the steep slope of a butte. All three are

on sparsely vegetated clay soil where the primary host plant, the Branched Umbrella Plant (*Eriogonum pauciflorum*) grows. Mormon Metalmark caterpillars are crepuscular and are typically active just before sunrise and shortly after sunset. Most of the morning observations were conducted during twilight and thereafter for 3-4 hours, until the caterpillars sought shelter out of view. A few observations took place in the evenings, from sunset until the caterpillars sought shelter for the night. We had relatively shorter evening observations because the caterpillars were active for a short period of time (the longest evening observation was approximately 1 hour). Evening observations at all three butterfly sites confirmed that the caterpillars actively forage briefly after sunset in addition to the longer morning feeding session observed in more southern populations (J. Powell, pers. comm.). Temperature, rain, and wind seem to influence feeding behaviour: the caterpillars begin to feed earlier in the morning when temperatures are between 8 and 20°C (caterpillars were observed feeding as early as 0405h on 17 June), and were not observed feeding when conditions were rainy, or colder than 8°C.



Figure 1. Mormon Metalmark caterpillar, July 2009. J. Janelle

The caterpillars have a distinctive appearance, particularly the older caterpillars: the body is purple, with two dorsal and two ventral rows of yellow nodules from which protrude a clump of bristly black hairs and a single longer white hair. The eyes and mouthparts are black and bulbous. The three pairs of legs closest to the head are black, thin, and pointed, while the five pairs of prolegs (also called false legs) on the abdomen are pink, rounded, and fleshy. The first four pairs are located on abdominal segments 3-6, while the last pair of prolegs is located on the 10th abdominal segment (Fig. 1). The first caterpillar, observed on 4 June, was only 4 mm in length and was confirmed to be *Apodemia mormo* under a dissecting microscope.

The caterpillars had a staggered emergence, and individuals of different sizes and in varying instars at different times were often observed in the same umbrella plant colony on the same day (Fig. 2, see inside front cover, top). Table 1 summarizes the first wave of larval observations from June to July 2009. The largest caterpillars observed, throughout mid- to late July, were up to 25 mm long. Smaller larvae (15 mm) were also observed in late July. Caterpillar size and appearance suggests that the Mormon Metalmark has at least five instars, but

this will be confirmed in 2010 with a larger sample size.

We observed that Mormon Metalmark caterpillars feed on the leaves, flowers, and stems of the Branched Umbrella Plant (Fig. 2, see inside front cover, top). Young caterpillars (probably the first 3 instars) rarely seem to leave the host plant, as they are completely dependent on it for food and probably shelter. Older, larger caterpillars (4th and 5th instars) were observed crawling away from their host plants, into cracks in the soil and under rocks to seek shelter and possibly to avoid predators. Others crawled into neighbouring Branched Umbrella Plants, perhaps expanding their foraging opportunities.

Mormon Metalmark caterpillars are typically solitary foragers with one individual on each plant; however, occasionally up to three individuals were observed on a single plant. From May to June, many umbrella plants are enshrouded with complex silk webbings over all or part of the plant, but it is unclear which species spins this webbing. The metalmark caterpillars seemed only to shelter in very fine silk nests, as opposed to the thick, more visible silk coating many host plants. Additional studies are needed in order to determine the role of webbing in the life cycle of Mormon Metalmark caterpillars.

Young caterpillars prefer to graze the upper surface of the umbrella plant leaves, whereas older caterpillars can eat entire leaves, as well as flowerheads and leaf stems. Characteristic reddish-brown damage on the plants is evidence of feeding by young larvae (Fig. 3). After foraging, the caterpillars typically descend the main plant stems to seek shelter. The caterpillars used a variety of microhabitats such as areas under stems, in the soil or leaf litter, cracks in the substrate, under

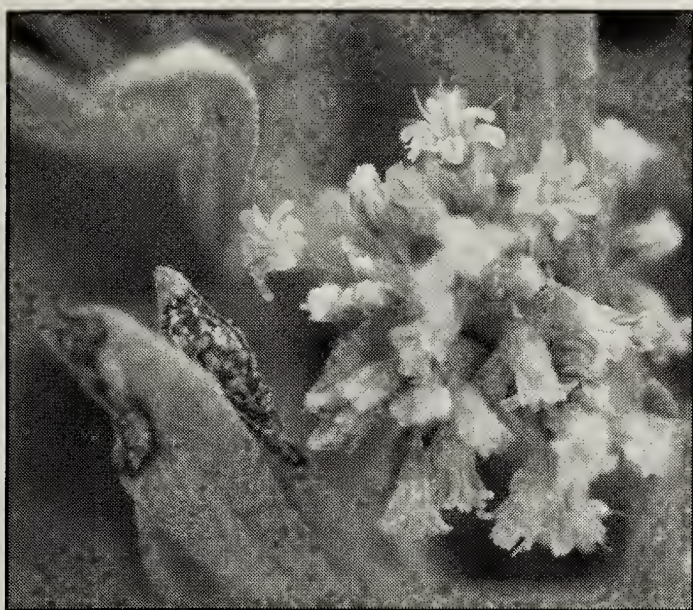


Figure 3. Branched Umbrella Plant with leaves eaten by Mormon Metalmark caterpillars, July 2009. S.D. Pruss

rocks, and under woody or dead plant material on or at the base of the host plant. Occasionally, the shelter sites are coated in a layer of silk so fine it is difficult to notice until a caterpillar is observed crawling into a small silk tunnel. Many caterpillars were observed returning to

the same sheltering spots after feeding, suggesting that once an individual has found adequate shelter it tends to reuse the same area.

Caterpillars that were observed once per week from mid-June to mid-July for the duration of the morning feeding began to “fade away” when they reached 20 to 25 mm in length. We assume that many of these caterpillars had begun to pupate; however, our attempts to find some of these pupae on the plants and in the surrounding soil were unsuccessful.

Unlike the caterpillars, adult metalmark butterflies are active during the hottest hours of the day (mid-day to evening). We observed our first mating pair mid-day on 17 August (Fig. 4) in Timmons Coulee of Grasslands National Park. We suspect that the individual with the larger body size was the female, because butterfly species with discreet generations in highly seasonal climates often exhibit protandry,



Figure 4. Mating Mormon Metalmark butterflies, 17 August 2009

K. Peterson

Table 1. Mormon Metalmark caterpillar observations at Grasslands National Park, SK, 2009.

Site	Number of caterpillars observed	Date range	Number of host plants	Habitat with <i>Eriogonum pauciflorum</i>
Laouenan Coulee	8	4 June – 13 July	6	One plant on top of steep hillslope, five others on hummocky coulee bottom; on gentle west-facing slope
Timmons Coulee	9	22 June – 9 July	9	Hummocky coulee bottom; on gentle southwest-facing slope
70 Mile Butte	8	15 June – 14 July	4	Steep, sparsely vegetated south-facing slope
South Gillespie	1	25 June	1	Top of a large, hummocky hill, on northwest-facing side

a form of sexual dimorphism wherein the males tend to emerge before the females to establish territories and increase mating success.⁴ However, this early emergence suggests that males will often be smaller, as they have not had as much time in their development to increase energy reserves and body size.⁴ This first mating pair we observed remained joined with no discernible movements for over an hour. We observed a second pair farther east in Police Coulee on 24 August. This pair was constantly disrupted by the diving attacks of a small, persistent single individual (likely a male), and the mating pair was forced several times to change its perch location on the umbrella plant.

Our observations of Mormon Metalmark caterpillars are the first ever documented in Canada. Learning more about the ecology of the caterpillar stage, estimating population sizes, and understanding mating behaviour will help us to define

and designate critical habitat, among other priorities outlined in the federal Recovery Strategy for this species,³ to ensure its protection and continued survival.

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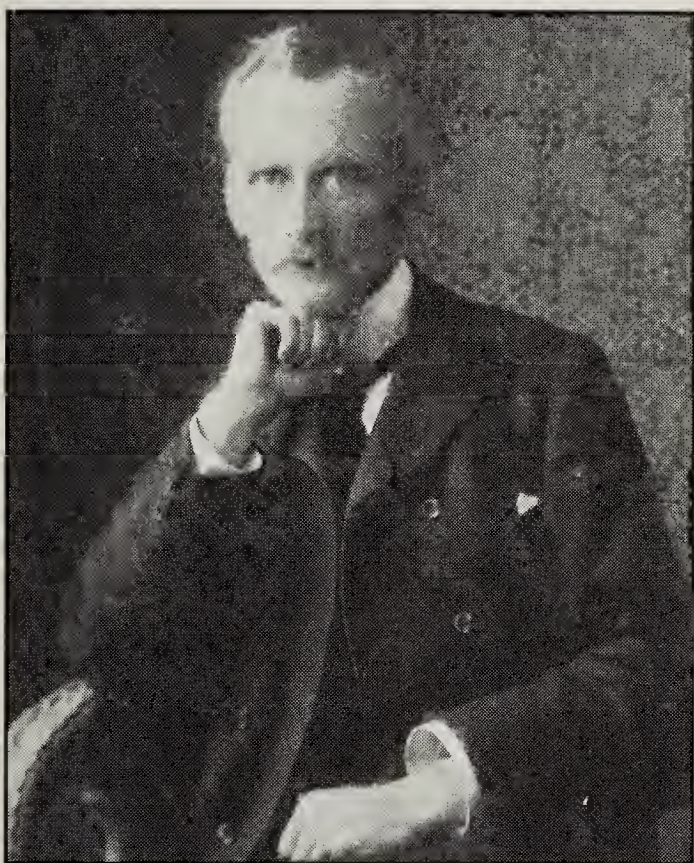


There is nothing pleasanter than spading when the ground is soft and damp.
- John Steinbeck

HISTORY

SASKATCHEWAN'S FIRST GAME GUARDIAN: NEIL GILMOUR, 1859 - 1940

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Portrait of Neil Gilmour

Neil Gilmour was a Saskatchewan pioneer in natural history and conservation, a dedicated educator, and for 20 years the right-hand man for Saskatchewan's Chief Game Guardian, Fred Bradshaw. In 1922 Gilmour found what was, for 30 years, believed to be the last Whooping Crane nest in Saskatchewan; this earned him unusual prominence in Bent's *Life Histories*.^{1,18} Despite his contributions, little information about Gilmour has been published; this article is intended to fill that gap.

Neil Gilmour was born at Brucefield, Ontario, on 6 February 1859, into a family of 13. In 1883, the Gilmours moved west to homestead in Saskatchewan south of

Buffalo Pound Lake, 3.5 km south of the present-day Buffalo Pound Provincial Park. Neil's homestead quarter was SW 6-19-25w2; Blofield School was later built on his property. For 6 weeks during the Riel Rebellion in 1885, Neil Gilmour freighted military supplies from Swift Current north to Saskatchewan Landing, from where they were sent downstream to General Middleton at Batoche.

Neil left the farming to his father and brothers and trained as a teacher at the Toronto Normal School. For 3 years he taught school at Banff, Alberta, where he "batched" with Reverend Charles W. Gordon, who later wrote under the pen name Ralph Connor and became "the most successful Canadian novelist in the early 20th century"⁸ and "the most famous Canadian of his generation."²¹ Gilmour served as an Indian agent, first at Norway House, Manitoba, and then on the reserves in the Qu'Appelle Valley north of Sintaluta.⁹

In 1907, Gilmour was appointed by the Department of Agriculture as the first full-time Game Guardian in Saskatchewan (two other men held brief appointments).⁶ Gilmour resided in Moose Jaw and served the southwest quarter of the province,⁶ 5 years before his close friend, Fred Bradshaw, in the same department, was promoted from clerk in the Weeds and Game Branch,² to Chief Game Guardian.³ Bradshaw and Gilmour together would have profound influences on conservation in Saskatchewan.

Gilmour arranged trips to Old Wives Lake for Fred Bradshaw and H.H. Mitchell, taxidermist at the Provincial Museum (now the Royal Saskatchewan Museum). In 1913, they used a motorboat from the southeast corner of the lake, but all subsequent visits left from the farm of Thomas McCrae, a rancher at the northeast corner of the lake since 1901,²³ using McCrae's boat. McCrae was keenly interested in natural history. On 8 July 1919, they visited the Isle of Bays, 5 km offshore, described by Bradshaw as "one of the most wonderful island bird sanctuaries on the North American continent";⁴ that year the island had produced about 1,500 young American White Pelicans. They took Byron Harmon of Banff as their cinematographer.⁴ In July 1920, accompanied by Thomas's 19-year-old son, Hugh McRae, Gilmour took an American, "Mr. Fleckinger [=Flickinger], the Ford camera man" to photograph the pelicans and other colonial birds for a silent documentary movie called "Bird City."²² The pelican numbers had declined drastically, attributed by Gilmour to the harmful effects of Flickinger's week-long residence on the island the previous year.

Gilmour subsequently visited the McCrae farm most summers, as did Fred Bradshaw, who once stayed for 3 weeks. Between visits, Hugh McRae collected important specimens such as the Dickcissel (in a very dry year), Cinnamon Teal, and Red Knot, which Gilmour passed on to Bradshaw at the Provincial Museum in Regina. After Hugh collected two Hudsonian Godwits on 3 May 1931, Bradshaw arranged for Hugh to obtain a collector's permit from Ottawa to make it legal for him to collect unusual species (H. McCrae, interview, 11 September 1967).

Bradshaw's annual report of 1921 reprinted in full the nine-and-a-half page

talk on the Economic Value of Birds given by Gilmour to the Public School Teachers' Convention at Shaunavon, 20 September 1920. After discussing the aesthetic value of birds, Gilmour used the published ornithological and entomological evidence to calculate the number of birds in the 100,000 square miles or 64 million acres of agricultural Saskatchewan – a figure of 32 million birds. He also estimated that this population daily consumed 12 billion insects.¹²

Gilmour's diligent and successful search for a Whooping Crane nest in 1922 became known across the continent. In 1926, in the sixth volume of his *Life Histories of North American Birds*, A.C. Bent considered Gilmour's one of the most important nest finds in North America. He devoted an extraordinary two pages of small print to Gilmour's account of how he watched an adult pair of Whooping Cranes from two different points on Shallow Lake, eight miles WNW of Kerrobert. This water body, 5 km long and from ~1.5 to 3 km in width, comprised upwards of 1200 ha but was nowhere deeper than 1 m. After 2 hours "playing hide and seek," each time ducking down out of site for 20 minutes to allow the crane to re-settle on its presumed nest, Gilmour moved along the shore until he had lined up the bird with a distant building. When the bottom of the marsh became so boggy he could not proceed, Gilmour walked around the south and west sides of the marsh until he could see the crane from a different angle. After a long slog in his hip waders, he came to an open sheet of water 10 m in diameter with a nest on the mound a foot above water.¹

The best description of the nest itself was not in Bent but in Gilmour's annual report: "The nest resembled a half submerged cock of hay, flat on top and completely surrounded by water.

Carelessly on the top of this mass of grass, was deposited the two large brownish buff coloured eggs, about four inches in length.”¹⁴ Bent mentioned the second nest with 3 eggs that Bradshaw had found in the same district on 28 May that year; the third egg was addled and collected for the Provincial Museum.^{1,24} In 1924, Mitchell reported details of both of the 1922 nests, adding that “It is probably advisable for the present to withhold exact locality of these breeding grounds.”²⁴ Mitchell knew about, but did not reveal, Bradshaw’s third 1922 Whooping Crane nest at Kiyiu Lake south of Plenty.¹⁸

In 1955, R.D. Symons commented that the Gilmour nest in 1922 was “closely followed as to habitat and terrain in making up the museum case of the Whooping Cranes, and was a most valuable aid. Neil was another dedicated man whose work was ... a labour of love, for the mere pittance such men received could not otherwise repay them for the long hours they spent in the field and exposure to the elements in open vehicles. Gilmour spoke in hundreds of rural schools and was indefatigable in spreading the gospel of conservation.”²⁶ More recent historical sleuthing by Hjertaas shows that Gilmour himself saw pairs of Whooping Cranes at Luck Lake in June 1926 and 1927 and that Steve West, Frank Roy’s uncle, had proof of nesting at Luck Lake in 1929.²⁵

Apart from one year, Gilmour’s annual reports were published in each of Bradshaw’s Reports of the Chief Game Guardian, within the Department of Agriculture, from 1912 through 1926. In 1913, Gilmour told of the benefits that accrued from closure of the former spring duck-hunting season and proposed that the fall hunting season be advanced from September 1 to September 15, to allow more of the ducks to reach the flying stage before the season opened.¹⁰ Gilmour also noted the decline of antelope and other

big game species throughout southern Saskatchewan; he stated in 1921 that “the southern portion of our province is no longer the home of our big game animals.”¹² By 1925, big game remnants existed only in Moose Mountain and Cypress Parks.¹⁶ Gilmour voiced strong support for creation of national antelope parks that were eventually legislated by the federal government in 1922 south of Maple Creek and in southern Alberta.¹⁹

In both 1920 and 1922, Gilmour found evidence of “duck sickness” (now known as botulism) with carcasses of birds scattered around the margins of Old Wives Lake.^{11,13} In 1923, he was perhaps the first to note the beginning decline in numbers, little more than two decades after their arrival, of the “Pinnated Grouse” [Greater Prairie Chicken],¹⁴ and mentioned that Gray Partridge had progressed east as far as Belle Plaine, where a nest with 20 eggs had been reported.¹⁴ In 1925, Gilmour’s territory was extended and he mentioned a November 1924 raccoon pelt obtained from the White Bear Indian Reserve north of Carlyle.¹⁶ This was the second raccoon record for Saskatchewan, the first having been from the Pipestone Valley in extreme eastern Saskatchewan in 1918-19.²⁰

Gilmour was a strong proponent of conservation education. In 1922, he and Fred Bradshaw gave 65 lectures about birds and mammals to 11,224 school children on the “better farming train” that toured the province.⁵ As part of his final annual report in 1927, he commented about the resiliency of the Coyote, whose numbers remained much the same, despite continuously having a price on its head, a testimony to the “great hardihood and the remarkable cunning of the coyote.”¹⁷ Gilmour retired after the 1927-28 season, but in 1929 a set of four charts, each displaying 25 different bird species in colour, were provided to him,

together with lantern slides, to show in schools.⁷

After Neil married Sarah Dunbar, the couple adopted a native girl from Norway House, Wanda, who later married a medical doctor in Winnipeg. Neil's brother Hugh's wife died in childbirth, and Hugh died about 2 weeks later; Neil and Sarah raised their three sons, the oldest of Hugh's five children, and two other branches of the family raised the two youngest, both daughters. Neil Gilmour died at Moose Jaw on 22 June 1940.²⁷

Acknowledgements

I wish to acknowledge assistance from Bill Gilmour of Moose Jaw and Wayne Pepper of Regina, and editorial improvements by Frank Roy.

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NOTES AND LETTERS

A QUERY FROM THE DISTANT PAST – MAGPIES VERSUS “HUNS”

Table 1. Locations of Gray Partridge (“hun”) and Black-billed Magpie sightings

Location	No. huns	No. magpies
NE of Delisle	6, 11	8 × 1
Near Harris	11, 7	6 × 1, 1 × 2
Near S. Sask River bridge	10	1 × 4
Stewart Valley	5	0
N of Swift Current	8	1
Total	58	21

On 8 March 1962, I drove from Saskatoon to Swift Current, on a chilly winter afternoon with high overcast and a stiff NE wind sending scurries of snow over the road. Birds were few, and well-scattered, mostly Horned Larks.

En route, I also noted seven coveys of Gray Partridges (“huns”), but was more intrigued to realize that all of the Black-billed Magpies that I saw (21 in total; Table 1) were within a couple of miles of a hun covey. In between, there were stretches of 16, 36, 86, 6, and 12 miles with neither huns nor magpies.

Huns have large clutches, so they must lose a lot of each year’s reproduction over the winter, but it seems unlikely that scavenging such losses would keep magpies in their near vicinity regularly. Were my observations merely coincidental (i.e., was the sample size too small), or have others noted similar associations and, like me, neglected to report them before now?

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LYNX PREDATION ON A YOUNG BEAVER

On 27 March 2001, I found clear evidence that an adult Canadian Lynx had killed and eaten a young American Beaver in Riding Mountain National Park, Manitoba.

Two days before, beaver tracks were observed where an individual had exited a pond via two separate burrows under

the snow and ice. The pond had no open water and it appeared that the level of water impounded by the beaver dam had declined over the course of the winter. Based on the tracks, the beaver was collecting branches from a live White Spruce (*Picea glauca*) and was dragging them back to the burrows.

When I revisited the area on 27 March, I found evidence that a lynx had killed a beaver in the area where the tracks had been seen two days before. The conditions were ideal for recording the incident as it had snowed approximately 2.5 cm during the early morning, and there was a hard crust of melted snow under the fresh snow. The lynx tracks were identified by the size and the characteristic round shape, and by the lack of claw marks, eliminating members of the dog family. The beaver tracks were distinctive as well, showing the large webbed hind foot and the distinctive marks made by the flat tail.

Judging from the fresh tracks, it appeared that the beaver had been feeding on Beaked Hazel (*Corylus cornuta*) and branches from a Trembling Aspen (*Populus tremuloides*) that had fallen the previous autumn. Most of the beaver's foraging had occurred approximately 45 m from the two burrows or access holes. Based on the size of the lynx tracks (13 cm × 13 cm), the individual was likely a large adult male.^{3,4}

Marks in the snow indicated that the beaver was killed about 2 m from its access holes. The trail left by the lynx as it dragged the beaver was easy to follow, and led to a protected spot about 250 m from the kill site. The lynx had dragged the beaver over most of the distance, but, based on the tracks, had lifted the entire carcass off the ground from time to time.

The lynx buried the carcass in the snow at the sheltered site that was surrounded by fallen trees on three sides and a standing White Spruce on the fourth. The carcass was mainly intact, although the head was separated. Close examination showed that the skull had one obvious puncture wound below the left eye. The skull was collected for age verification.

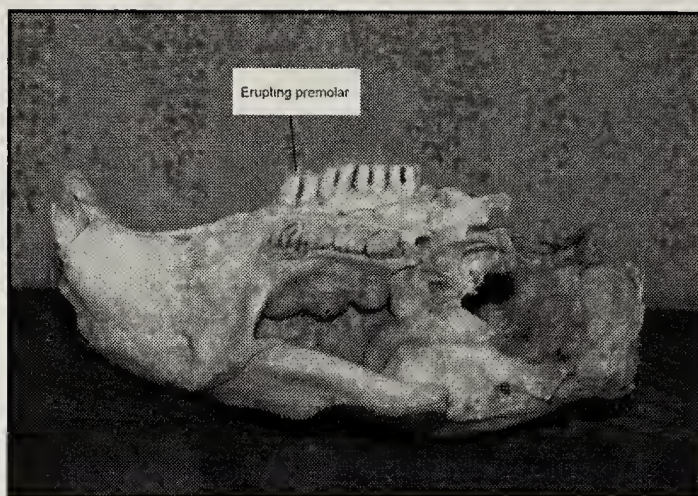


Figure 1. Dentition of a lynx-killed beaver showing eruption of premolars.

No measurements of the beaver were taken.

I revisited the carcass cache site on 28 March. The stomach contents of the beaver were all that was left. The tracks indicated that a lynx (assumed to be the same one) had followed my snowshoe trail from the day before, suggesting that it was unperturbed by my previous visit.

Prey caching by lynx is not uncommon, and food items are often buried in snow as described above. As well, caches are generally consumed within 2 days, as was the case in this example.³

Beaver typically make up a limited portion of lynx diets. While lynx prey on Snowshoe Hares throughout the year, predation on animals other than hares occurs mainly in the non-winter months.³ This makes my observation noteworthy.

The dynamics of the event are interesting. The lynx was likely an adult, but the beaver was immature, and likely relatively small. Based on the fact that the premolars were still erupting, I estimate the beaver was 9 to 11 months old (Fig. 1). The premolar eruption process is usually completed by 1 year of age.² I assumed that the beaver was born in the previous spring, as the average birth date for beavers in North America is late April

to June.¹ The evidence that the lynx was able to lift the entire beaver carcass from time to time also suggests the beaver was not a mature individual.

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BLACK-CAPPED CHICKADEES AND WHITE-BREASTED NUTHATCHES SCAVENGE A DEER CARCASS

The carcasses of mid-sized to large animals comprise a high quality food resource for both predatory and omnivorous animals, especially during the winter months when few other food resources may be readily available. A number of our local winter birds make significant use of carcasses, including Ravens, which often are among the first animals to arrive at a carcass, and Black-billed Magpies and jays, which do best after carcasses have been opened by other animals. Black-capped Chickadees, White- and Red-breasted Nuthatches, and Hairy and Downy Woodpeckers might all be expected to scavenge carcasses, based on their use of suet feeders, but there are few well documented observations of their activities in this respect. Here we report carcass scavenging by two of the latter species.

In mid-January 2010, we found a group of three dead White-tailed Deer along the banks of the Assiniboine River just west of Winnipeg, Manitoba. The site had been visited by Coyotes, Red Foxes, and possibly local farm dogs, which had opened the carcasses and consumed about 50% of the muscle mass

of the deer. While we investigated the remains, a mixed flock of Black-capped Chickadees, White-breasted Nuthatches, and a Downy Woodpecker moved into the immediate area. The chickadees showed a particular interest in the deer we were examining, repeatedly approaching it but always turning away just before landing. We stepped back several feet from the carcass to allow the birds more room. Shortly thereafter, a chickadee launched from a small shrub, landed on the exposed femur of the deer, reached under the deer's skin, and pulled off a tiny strip of muscle. After taking a few seconds to consume the small piece of meat, it reached under the deer's skin again, tore off a second piece of muscle and then flew off with the tissue in its beak. We reached for our camera and set up near the deer to try and document this activity.

Over the next 20 minutes, we observed at least five chickadees and two nuthatches repeatedly scavenging small pieces of muscle from the deer carcasses. The accompanying photographs provide documentary proof of this activity: a Black-capped Chickadee lands on a deer carcass (Fig. 1, see inside back cover, top), reaches into it and pulls off a small

strip of muscle tissue, and then emerges with the tissue in its beak (Fig. 2, see inside back cover, bottom). The White-breasted Nuthatches proved too wary to be unambiguously captured in the act of scavenging with the camera equipment we had on hand, ceasing their activity and flying off each time we attempted to close within ~8 m of their position. We did not observe the Downy Woodpecker feeding on the carcasses, but it remained in the immediate vicinity for the entire time we were present, searching the nearby trees where the chickadees and nuthatches were caching pieces of meat and fat.

Black-capped Chickadees have previously been observed scavenging skunk and deer carcasses.^{2,3} They are generally thought to prefer fat,⁶ but in our observations, muscle was the primary tissue of interest. Among closely related passerines, the Great Tit (*Parus major*) is similarly reported to scavenge carcasses,⁴ but also hunts and kills hibernating bats during periods of extreme winter weather.¹ There are a few observations of woodpeckers scavenging carcasses,^{4,5} but we found no previous

reports of carcass scavenging by White-breasted Nuthatches.

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SURVIVAL OF A ‘FOSTERED’ YOUNG GREAT HORNED OWL

On 10 March 2009, I captured an adult Great Horned Owl in a net near the Edmonton International Airport. The bird was previously banded (no. 788-12210), and I recorded this information as well as an assessment of the bird’s condition before releasing it. Later examination of banding records indicated that I had banded this bird as a nestling on 28 May 2002. However, as this was no ordinary nestling, I will share its remarkable story in this note.

Around 5 May 2002, a flightless young owl had been found wandering on the ground in the campground at the Blood Indian Creek Reservoir about 55 mi south of Coronation, Alberta. A search for the

nest by some campers found that it had blown down and no adults or young owls were observed in the area. The owlet, which had no physical injuries other than being somewhat emaciated and very hungry, was cared for and rehabilitated for 2 weeks at the nearby T.K. Ranch (by C. Biggs, a local volunteer). On 19 May 2002, I was contacted by Mrs. Biggs, who informed me that she had an abandoned Great Horned Owl nestling that needed to be returned to the wild. Fostering the young owl in another active nest would be a critical step in this process.

I regularly monitor Great Horned Owl nests in the Edmonton area in preparation for banding the young, and in 2002, there

were a number of suitable nests for the fostering attempt. The owlet was delivered to me on 27 May at Leduc, Alberta. Based on the age of the bird, there was a good candidate nest near Morinville, where I had banded two young of a similar age in the previous week. The following day with the assistance of A. De Groot, I banded the owlet and placed it in the candidate foster nest near Morinville. My hope was that the adults would accept and feed the fostered owlet, and because it was the same age as the other nestlings, it should be able to compete for food and survive in the nest until fledging.

Fostering of young in wild families is not a new venture and has been undertaken for a number of species, including the Great Horned Owl. A short note on the steps taken for a successful fostering of a nestling Great Horned Owl is described on the Alabama Wildlife Center website.¹ Unless a fostered young is marked and observed later, we do not know what happens after the bird leaves the nest

area. The recovery of this fostered young later in its adult life, 7 years after the event, is strong evidence that if done properly, fostered young can survive.

The fostered young, placed in the nest at Morinville in the spring of 2002, moved approximately 30 mi south to where it was recaptured in March 2009. I do not know when it dispersed from the nesting area to its current breeding territory where it was captured, but I do know that this owl survived the fostering action and is now living a healthy life.

Acknowledgments

Thanks to G.W. Beyersbergen for assistance in preparing this article.

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- Erhard (Hardy) Pletz, Edmonton, AB



Juvenile Great Horned Owls.

Ryan Fisher

40th ANNIVERSARY OF THE SASKATCHEWAN OUTDOOR AND ENVIRONMENTAL EDUCATION ASSOCIATION

In 1969, a group of passionate educators came together to create an organization that later came to be known as the Saskatchewan Outdoor and Environmental Education Association (SOEEA). In the beginning, outdoor education was emphasized and environmental awareness was not yet prominent; at that time, the group was known as the Saskatchewan Outdoor Education Association (SOEA). Our pioneers came together to promote the importance of learning in and about our natural world within Saskatchewan education systems. As Jack Mackenzie, founding member, noted in a recent interview, “[T]he goal was to blow fresh air into the school system.” From the beginning, an inter-disciplinary approach was used. Early leaders came together from many subject areas including science, physical education, arts, social studies, math, and history, and from many levels including youth agencies, Saskatchewan universities, and various school boards. It was recognized that much of the curricular content could be applied and taught in outdoor environments.

Through the early years, SOEA offered a number of conferences and workshops, and then in 1973, the first issue of our newsletter, *Envisage*, was published. In 1974, SOEA assisted the Ministry of Education with publishing *Out to Learn: Guidelines and Standards Manual for Outdoor Environmental Education*. This was a provincial education document that was designed to assist teachers in developing safe and well-organized outdoor education programs. *Out to Learn* was more recently revised and republished in collaboration with the Saskatchewan Ministry of Education in 1991. These publishing efforts and

five successful conferences led to the broadening of SOEA’s reputation as a model association that was quickly becoming recognized by educators across Canada. In 1975, SOEA hosted Canada’s second National Outdoor Education Conference, “Challenge for Education - Hope for Environment.” This renowned event took place in Fort San, SK, and brought over 400 people together to work towards our common goal of developing and disseminating effective outdoor education practices. The keynote speaker was Dr. Julian Smith, a professor from Michigan State University who had mentored many Canadians interested in the area of outdoor education. Dr. Smith had long seen outdoor education as a means for curriculum enrichment. In his work, he has noted that our natural environment provides a learning climate that allows students direct and authentic experiences (*sensu Broda*¹).

Environmental concerns, including conservation, pollution, and resource management, were topics that began to enter Saskatchewan’s collective conscious in the late 70’s. In 1978, the organization’s name was changed to Saskatchewan Outdoor and Environmental Education Association under the direction of Chairman Barry Mitschke. The name change, as well as a revamped mission and vision, came as a result of shifting societal concerns. Another milestone at this time was the awarding of the first Melanson award to Jack McKenzie for his long-term commitment to outdoor and environmental education in Saskatchewan. Since then, 19 other notable Saskatchewan educators have received this award for innovative teaching techniques, demonstrating knowledge of natural environments, and taking a holistic

approach to outdoor education. To these recognized individuals we gratefully pass on a heart-felt thanks for their continued efforts.

Throughout the 1980's, SOEEA volunteers continued to host numerous conferences and workshops in areas such as Candle Lake, Cypress Hills, Saskatoon, Lumsden, Waskesiu, Moose Jaw, Fort Qu'Appelle, and Moose Mountain Provincial Park. Numerous articles and resources continued to be shared through the *Envisage* newsletter. Long-time SOEEA chairperson and Melanson recipient Barry Mitschke wrote "The Status of Formal and Informal Outdoor/Environmental Education in Saskatchewan: 1986 - A SOEEA Research Paper." This involved a province-wide survey of educators on the status of outdoor/environmental education. In addition, SOEEA worked with Saskatchewan Parks and Recreation to launch the still popular Project Wild Resource Guide. It was and is common for SOEEA to send members to national and international conferences yearly. For example, in 1987, six SOEEA delegates went to the North American Association for Environmental Education (NAAEE) conference in Quebec City to learn from and collaborate with leaders in the field. Over the years, SOEEA has collected membership dues and has received minor grants for initiatives, and we continue to rely heavily on the work done by strong collective efforts of a dedicated group of volunteers. Until the early 1990's, financial support from SOEEA for educators and learners had been limited. This changed in May 1994, when we were able to start supporting Environmental Action projects and field excursions. This financial support helped teachers and students get outside, promote active healthy lifestyles, appreciate the natural environment, challenge participants' thinking, and encourage

long-term changes in behaviour. Many Saskatchewan students have benefited from this funding.

By 1995, SOEEA's mission had shifted from being focused on outdoor learning and pursuit towards a much stronger emphasis on environmental concerns. Due to this shift in focus, our eligibility as a recreation association had come under question, and we worked on reviewing our mission and goals. Through this process, we re-focused on the importance of becoming active within our environment and getting outside again. It was at this time that SOEEA introduced the first Ecotour to the newly established Grasslands National Park, in southwestern Saskatchewan. These tours continue to attract many interested parties and help participants gain awareness of our different eco-regions. Through these trips, many have gained an appreciation for the importance of outdoor education and are inspired to bring their students and families to the areas visited. This year, SOEEA is hosting its 15th Ecotour at the Boreal Learning Centre in Ness Creek, SK.

We have again reviewed our strategic planning in recent years and have reconfigured our structure to include collaborative working groups. Our mission and goals have been revamped to clarify our current vision and lead us onward towards our quest for interdisciplinary, progressive education within our province. We strive to assist in the creation, coordination, and delivery of integrated, high-quality outdoor and environmental education programs. Saskatchewan students deserve an education that takes them outside and offers first-hand experiences. SOEEA labours to support Saskatchewan educators at all levels, including post-secondary, in the development of appropriate and responsible endeavours to meet these

needs of our students. Going forward, we are moving to offer certification programs in the areas of outdoor and environmental education. It is our hope that through these programs, Saskatchewan educators will be empowered to explore new techniques, develop local programs, and assist their colleagues in the development of projects and programs.

As we look back at the accomplishments and celebrate our past at this time, we continue to actively work toward future goals and initiatives. Our board understands that we need to continue to push ourselves beyond the classroom walls, to build connections and partnerships, support each other,

and to come together in a community of activism in pursuit of sustainability goals. We will be able to sustain ourselves and our efforts through our connections with one another.

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EDITORS' NOTE: For more information about SOEEA, visit their website at: <www.soeea.sk.ca>



Winter Weasel

Randi McCulloch

PHOTO NOTES

COUGAR TRACKS IN ALBERTA



Cougar Tracks.

Saikat Kumar Basu

The Cougar is an elusive North American large cat that has a wide range stretching from the Yukon to the Andes. In western Canada, Cougars have been located in interior British Columbia, southwestern Alberta, and southern Saskatchewan. The Cougar tracks shown in this photo were detected and photographed by Eric Van Gaalen and Saikat Kumar Basu at the Lakeview Ridge, Waterton Lakes National Park, Alberta, at ca. 3000 m elevation around 09:00 h on 10 October 2009 after a thick snowfall the night before. Cougar tracks do not typically show the presence of claws, the front feet are longer compared to the rear ones, and the front toes are usually spread a bit wider. Often, tail tracks of these cats can be seen following the footprints. It was difficult to ascertain whether this track is the front or rear foot

print, since most other prints were lost in the early morning snowfall and appeared to be 1 or 2 days old based on the leaf debris collecting on the surface of the imprints. This Cougar track was located close to the park boundary; tracing it, we discovered that the animal had forced its way through the barbed wire of the park fence, scratching through the snow on the lowest wire that caught some of its body hairs. This suggests that Cougars probably frequently cross the park boundaries into the adjoining areas in search of food. Several other not so well preserved Cougar prints were located close to the barbed wire fence, and it was difficult to determine whether there was more than one individual or if they were male or female. Mostly three sub-species have been reported from western Canada. The sub-species *Puma concolor*

(syn. *Felis concolor*) *missoulensis* across southern Alberta, Saskatchewan, and interior British Columbia; *P. c. oregonensis* along coastal British Columbia; and *P. c. vancouverensis* on Vancouver Island only.^{2,4,7} Latest reports indicate population sizes of around 4,500 cougars in Canada, with the highest concentration in British Columbia, over 600 in Alberta, and around 300 in Saskatchewan.^{1,3,5,6}

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UNUSUAL LARK SPARROW NESTING SITE



Lark Sparrow nest in an upturned tree stump. The nest can be seen in the top central portion of the stump.

Sig and Ruby Jordheim

Sig and Ruby Jordheim have farmed for many years in White Bear, Saskatchewan, near the South Saskatchewan River, where Sig has spent a lifetime closely observing wildlife. When the river was dammed in the 1960's, the groves of giant poplars lining the banks were bulldozed

and buried. In later years, many remnants of this interned riparian forest returned as driftwood, collecting on the eroded river banks. From among this driftwood, Sig and Ruby salvaged a large stump, planting it upside down as an abstract lawn ornament, or perhaps as a subtle commentary on man and nature. In any case, in the summer of 2009, a Lark Sparrow, undeterred by the peculiar location and position of the stump, made use of a hollow

among the upturned roots for an unusual nesting site. Sig Jordheim writes: "Before starting school in 1928, I had a deep interest in birds and when my two older brothers went to school I searched for prairie bird nests. I was quite familiar with the Horned Lark, Vesper Sparrow,



Close-up of the Lark Sparrow nest.

Sig and Ruby Jordheim

McCown's and Chestnut Coloured Longspurs. However, I took no notice of the Lark Sparrow until the 1960's when, on my own farm, I had established eight miles of field shelterbelt. I have usually found nests of these birds on the ground

and found the location of this particular nest unusual."

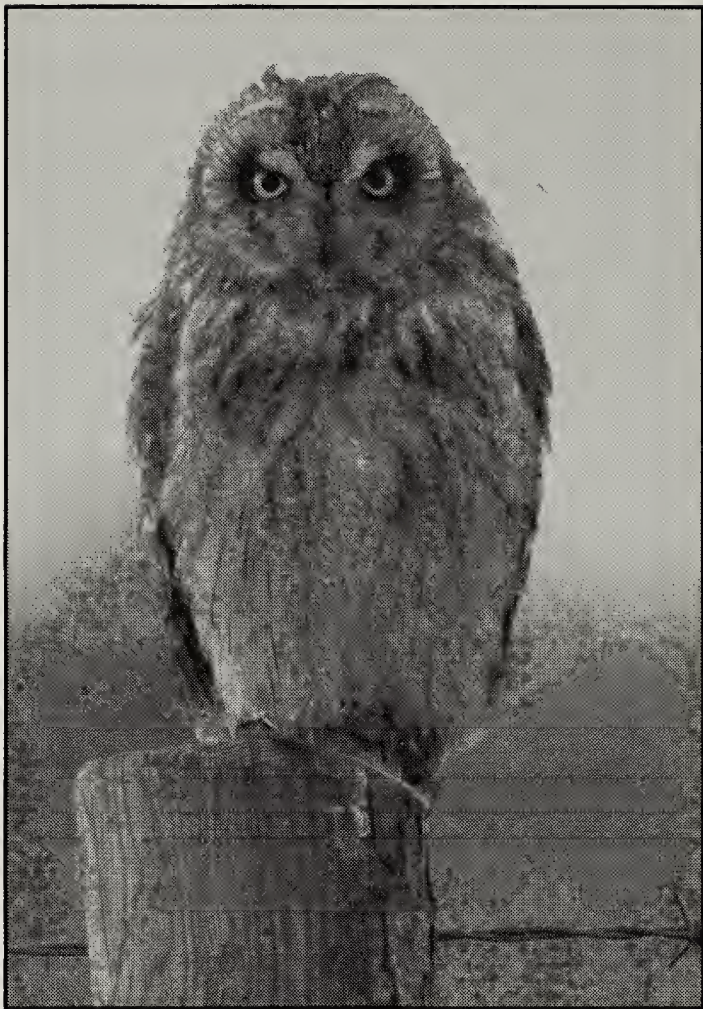
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Juvenile Rough-Legged Hawk.

Randy McCulloch

SHORT-EARED OWL



Short-eared Owl.

Ryan Fisher

This Short-eared Owl was photographed in the Last Mountain Lake National Wildlife Area, SK, in late June 2006. Short-eared Owls are an eruptive species, meaning that large numbers of these owls tend to show up in certain parts of the country and in certain years when voles (their primary prey item) are plentiful. 2006 was a good year for Short-eared Owls in the Last Mountain Lake area, and we frequently observed this individual sitting on the same fenceline night after night.

It is interesting to note that in 2006 we observed five to ten Short-eared Owls every day within the wildlife area, while in 2007 and 2008, in the exact same area, we were lucky to see one or two all year.

Short-Eared Owls inhabit marshes and grasslands of Saskatchewan, but also range across much of North America and will even nest in the high-arctic tundra. They primarily feed on small mammals (such as voles), but they have also been known to eat small birds. Short-eared Owls nest on the ground in relatively tall, dense, grassland (30-60 cm high). Because of their propensity to nest in grasslands and because of their relatively large area requirements, Short-eared Owls are susceptible to human disturbance in the form of agriculture and habitat loss. Because of this sensitivity, they are considered a species of Special Concern by the Committee on the Status of Endangered Wildlife in Canada, meaning that they have the potential to become a threatened or endangered species.

So, when you are out on the prairie, always keep an eye open for a Short-eared Owl (or many Short-eared Owls, if you happen to be in a good area or in a good year with a lot of voles).

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Nature will bear the closest inspection. She invites us to lay our eye level with her smallest leaf, and take an insect view of its plain.

- *Henry David Thoreau*



Spring wetland. Lesser Snow Geese, Ross' Geese, and Canada Geese during spring migration in 2008, at Stalwart National Wildlife Area, SK. Kerry Hecker, Environment Canada - Canadian Wildlife Service



*To see a world in a grain of sand,
And a heaven in a wild flower,
Hold infinity in the palm of your hand,
An eternity in an hour.*

- William Blake

BIRDS OF EASTERN NORTH AMERICA: A PHOTOGRAPHIC GUIDE

PAUL STERRY and BRIAN E. SMALL. 2009. Princeton University Press, Princeton, NJ. Paper: \$18.95 US. ISBN: 978-0691-13426-0. Cloth: \$45.00 US. ISBN: 978-0691-13425-3. 336 pages. 13.5 × 21 cm. 1118 colour photos. 406 maps.

BIRDS OF WESTERN NORTH AMERICA: A PHOTOGRAPHIC GUIDE

PAUL STERRY and BRIAN E. SMALL. 2009. Princeton University Press, Princeton, NJ. Paper: \$18.95 US. ISBN: 978-0691-13428-4. Cloth: \$45.00 US. ISBN: 978-0691-13427-7. 416 pages. 13.5 × 21 cm. 1341 colour photos. 449 maps.

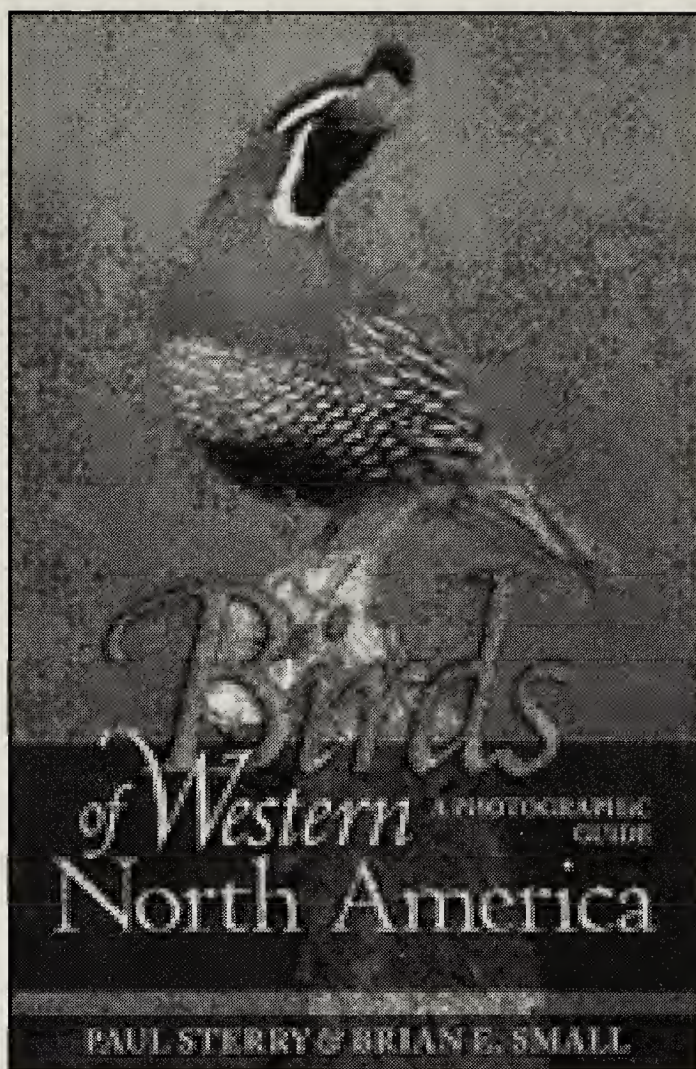
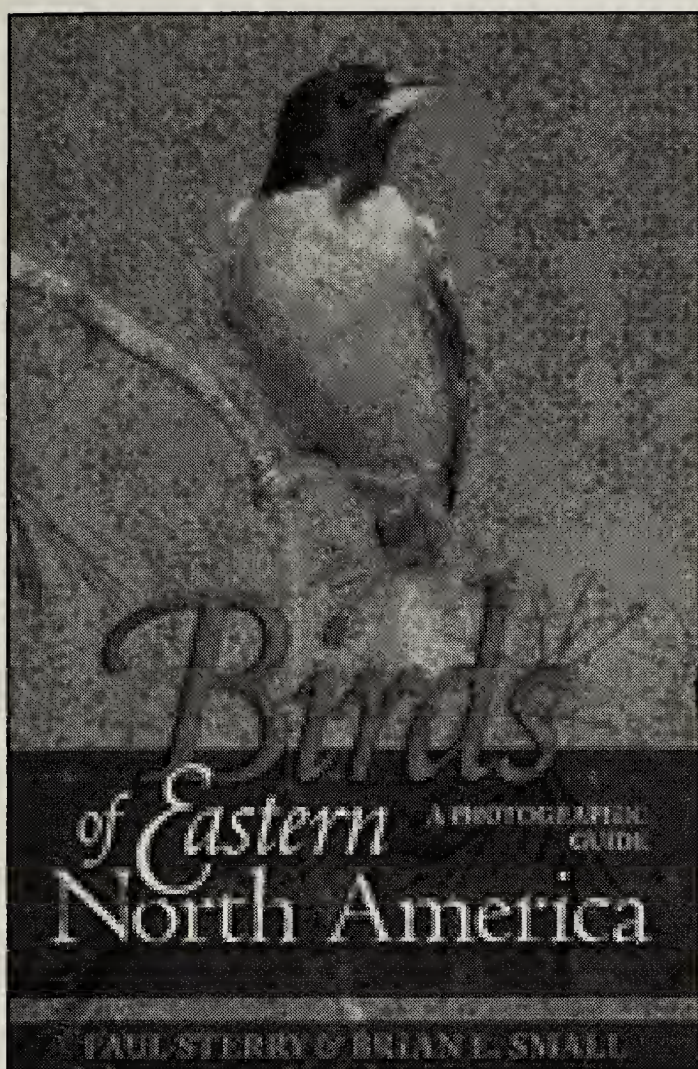
In this review, I will examine both the eastern and western editions of the photographic guide to the birds of North America by Paul Sterry and Brian E. Small. The two books are very similar in format and overall content.

The first chapter in both editions is the Introduction. In this chapter, species and photo selections for the book, instructions on how to use the book, bird topography, glossary of 33 bird terms, brief discussion of plumage, bird identification, and bird migration, and a large section on bird habitats with photos of example habitats and typical bird species are included. This section is most useful to beginner birders and first-time users of these bird guides. I highly recommend reading the section on how to use these books before you use the guides for the first time.

Of course, the bulk of both books comprises species descriptions and digital photos. Species are presented by order and family with a few exceptions where superficially similar species are placed together. Species descriptions are

placed on the left-hand page, with most of the corresponding digital photos on the right-hand page. Two or three species descriptions are placed on a page. At the end of the book, exotic and known feral introduced bird species are included with five to eight species descriptions per page. The eastern edition has 20 exotic and known feral introduced bird species while the western edition has about 35 exotic and known feral introduced bird species.

Species descriptions are brief, clearly and accurately written, with minimal ornithological jargon. The text is neatly matched with the corresponding digital photos. Differences between sexes, morphs, similar species, subspecies, seasonal plumages, and adults and juveniles are particularly well emphasized. Also included are voice (phonetic description of song and calls), status, and habitat and observation tips. These last two sections are designed to help birders increase their chances of seeing or hearing a bird species by identifying the best habitat types and seasons



for species identification. The Cornell Laboratory of Ornithology prepared the clear, accurate, and current species range maps used in these two books.

The centrepieces of these bird guides are the digital photos. Unlike most other bird guides, they are not cut outs of birds pasted onto a simple white or coloured page. Instead, they are large cropped photos with natural backgrounds. A major drawback to this approach is the inability to include arrows and phrases to directly point to key identifying features of the bird in the photo. The digital photos in these two books are larger than photos in other bird guides such as the Kaufman Guide to Birds of North America.² The photos are clear and sharp with attractive and simple captions and clearly show the beauty and key identifying features of the bird.

These guides are beautifully formatted and illustrated. The text size is large

enough and the Arial font is clear and sharp for easy reading.

The question arises of which is better, digital photos or artist paintings (e.g. as in Sibley's Guide to Birds³ or National Geographic Birds of North America, 5th Edition¹) in field guides? When done properly, I feel that digital photos and artist paintings of birds both can be highly effective in assisting birders with bird identification. Although use of digital photos in bird guides has increased considerably in recent years, I still like both approaches to bird guides.

A more detailed Table of Contents in these books with the species accounts divided by bird family would have been very helpful in finding species more easily and more quickly. There is a detailed Index with common and scientific bird names that makes searching for a specific species in these guides very easy.

The Further Reading section contains addresses for seven birding websites and citations for 16 bird guides and birding books.

The major differences between the two editions include additional and different species, primarily in the American southwest in the western edition and some different bird and habitat examples in the Introduction. In the western edition, Western Meadowlark is used instead of Eastern Meadowlark as an example grassland species.

The bottom line

The western edition is a better value because it has more species descriptions and digital photos for the same price. If you like these guides, you should select the edition depending on which half of the continent that you do most of your birding. Either edition would work well for a Saskatchewan birder.

The authors state that these guides are “intended to cater to the needs of the keen birder - the sort of person whose enthusiasm is built on several years of experience”. I completely agree with their statement. I would say that these guides are ideal for intermediate to experienced birders who prefer digital photos to artist paintings in their field guides.

1. DUNN, J.L. and ALDERFER J. 2006. Field Guide to the Birds of North America, Fifth Edition. National Geographic Books, Washington, DC.

2. KAUFMAN, K. 2000. Birds of North America. Houghton Mifflin Company, New York, NY.

3. SIBLEY, D.A. 2000. The Sibley Guide to Birds. Alfred A. Knopf, New York, NY.

- *Reviewed by Rob Warnock, E-mail:*
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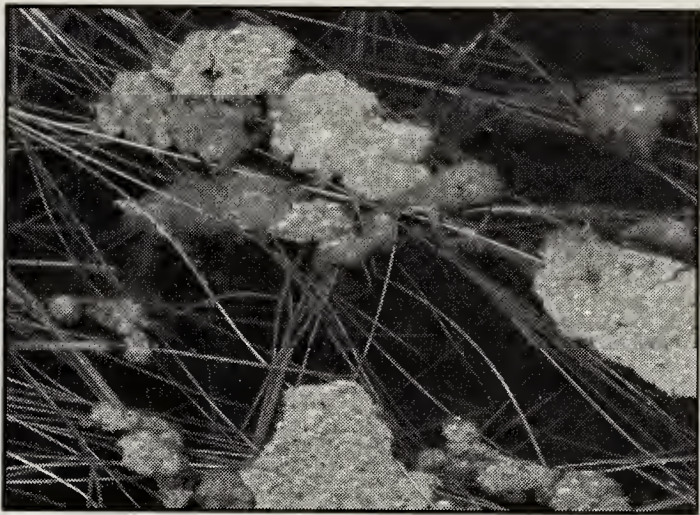


River Otter.

Nick Saunders

MYSTERY PHOTO

“ANSWER” TO THE DECEMBER 2009 MYSTERY PHOTO



Unfortunately, we received no reader responses regarding the festive pink sludge introduced in the December 2009 Mystery Photos. Thus, the nature and origin of the substance shall remain a mystery for the time being, but we will keep you posted on any new developments.

MARCH 2010 MYSTERY PHOTO

Ryan Fisher found this interesting pattern of tracks at Condie Nature Refuge (near Regina, SK). Any thoughts on who might have made these, and to what end?



Blue Jay, founded in 1942 by Isabel M. Priestly, is a journal of natural history and conservation for Saskatchewan and adjacent regions. It is published quarterly by **Nature Saskatchewan, 206-1860 Lorne Street, Regina, Saskatchewan S4P 2L7.**

CN ISSN 0006-5099

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Common names are used for birds, mammals, butterflies, reptiles and amphibians. Bird names follow the Checklist of North American Birds by the American Ornithologists' Union (7th edition, 1998); mammal names, Mammal Species of the World by Wilson and Reeder; butterfly names, The Butterflies of Canada by Layberry et al; and names of reptiles and amphibians follow Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico by Brian I. Crother, Committee Chair (2001), <<http://www.ssarherps.org/pdf/Crother.pdf>>. For other groups, both scientific and common names are included.

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Printed by Administration Centre Printing Services, Regina, SK.

THIS ORGANIZATION RECEIVES FUNDING FROM



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Top: Figure 1. Black-capped Chickadee landing on a deer carcass. See note by Parker & Lywak on p. 47.



Bottom: Figure 2. Black-capped Chickadee successfully removing a piece of muscle tissue from a deer carcass. See note by Parker & Lywak on p. 47.

Brian Parker

Front cover: Mormon Metalmark caterpillar. For more on metalmark caterpillars, see article by Peterson et al. on p. 37.

Johane Janelle

Back cover: Winter moose.

Randy McCulloch



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